



EMBEDDED  
INGENUITY





## About Pixus Technologies - “Embedded Ingenuity”

Pixus Technologies utilizes our extensive experience in embedded computing systems and electronics enclosures to provide the best solution for our customers at highly competitive prices. With a mix of in-house development and leveraging proven, time-tested designs from key partners, you receive the best-of-the-best of all elements of a system that meets your specifications and budget constraints. Leveraging sleek European quality mechanical designs from Rittal and other key partners, Pixus is able to offer time-tested embedded computing system platforms and electronics enclosures at highly competitive prices. Rittal is the largest manufacturer for enclosures in the world.

Pixus provides unsurpassed thermal management solutions, creative design innovations, backplane design and subsystem integration expertise. This powerful combination results in the premier value in the industry for electronics packaging. The company offers backplane designs, chassis platforms, and board-level products in OpenVPX, AdvancedTCA, MicroTCA, and custom architectures. Legacy architectures such as CompactPCI and VME/64x are also available. Additionally, Pixus provides a vast ecosystem of embedded components including ejector handles & panels, card guides, rails, subracks, instrumentation cases and more. In May 2011, Pixus Technologies became the sole authorized North and South American supplier of the electronic packaging products previously offered by Kaparel Corporation and Rittal.

### Benefits of Choosing Pixus Technologies

- Manufacturing/integration resources in Canada, USA, Asia, and Europe
- Established 2010 and headquartered in Waterloo, Ontario (Canada’s Technology Corridor)
- Superior, dedicated service
- Excellent quality & reliability
- Nimble approach means best & most cost-effective solution
- Engineering expertise in electrical, mechanical, and integration
- Privately owned and financially stable
- ISO9001:2008 and ITAR registered

### Pixus Timeline

The name "Pixus" is derived from the companies roots going back to 1996.

Many of the key staff, including the founders were Kaparel employees going back nearly 20 years.

1996 – Pixstream is founded

1999 – Pixstream spins off Kaparel

2001 – Kaparel acquires Jardon Engineering

2002 – Rittal Corporation acquires Kaparel

2010 – Rittal closes North American operation

2010 – Pixus is founded, exclusive supplier of Rittal products in North America

2012 – Pixus offers customized chassis platform and backplane solutions, includes Mil/Aero offering

2015 – Pixus expands from Level 3 to Level 4 integration

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## European Quality Sensibly Priced

- High quality Germany and North American designs
- Low-cost manufacturing at top enclosure center in the world, superior quality and consistency
- Customization expertise, lower volumes accepted
- Focus on superior service and on-time delivery
- ITAR-compliant, Mil/Aero expertise

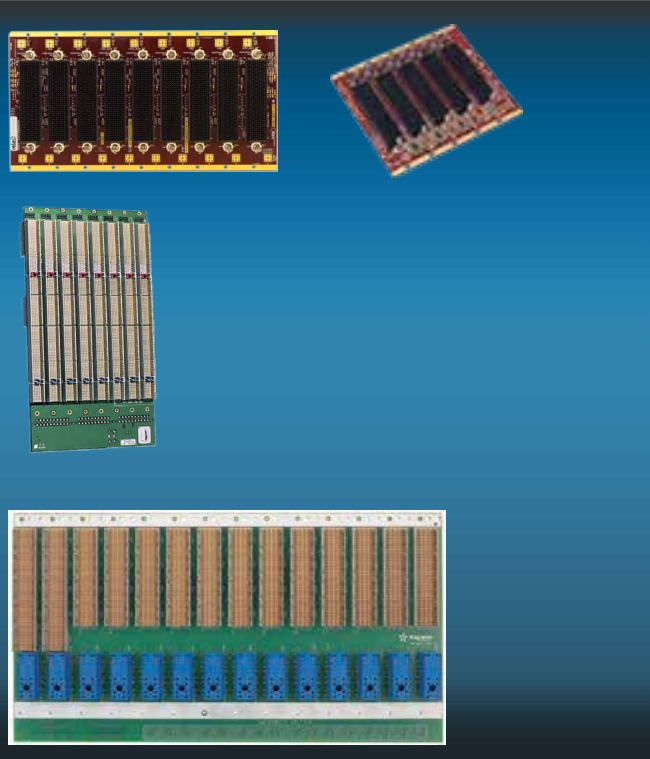
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In May 2011, Pixus Technologies became the sole authorized North and South American supplier of the electronic packaging products previously offered by Kaparel Corporation and Rittal.



# OUR PRODUCTS

Pixus Technologies utilizes our extensive experience in embedded computing systems and electronics enclosures to provide the best solution for our customers at highly competitive prices. With a mix of in-house development and leveraging proven, time-tested designs from key partners, you receive the best-of-the-best of all elements of a system that meets your specifications and budget constraints.



## BACKPLANES

Pixus has one of the most experienced teams in high-performance backplane design. Our expertise includes OpenVPX, MicroTCA, AdvancedTCA, and custom architectures. The company also has a vast library of legacy VME/64x, CompactPCI backplanes and power interface boards.



## CHASSIS PLATFORMS

With over 100,000 components, Pixus' modular design platforms provide virtually unlimited chassis configurations for Eurocard-based systems. This includes OpenVPX, VME/64x, CompactPCI, and custom. The company also has a wide range of design options for AdvancedTCA and MicroTCA architectures.

Pixus offers backplane and chassis platforms in OpenVPX, MicroTCA, AdvancedTCA, and custom architectures. The company also has a vast library of legacy VME/64x, CompactPCI solutions in virtually unlimited configurations.

Designed to meet the challenging environments of Telecommunications NEBS certification these products have also been widely used in Military/Aerospace, Medical and Industrial applications.



**Rails**

**Card Guides**

**Handles and Front Panels**

**Side Panels and Flanges**

## COMPONENTS

Pixus Technologies catalog of rails, card guides, front panels, handles, side panels, and covers, enable equipment manufacturers to quickly and reliably create system packaging solutions for their application. Pixus Technologies can customize these parts for customer specific requirements.



## WE HAVE DONE THIS FOR OVER 20 YEARS

Leveraging Rittal's sleek European quality mechanical designs, Pixus is able to offer time-tested embedded computing system platforms that are built in one of the largest manufacturing centers for enclosures in the world.

With Pixus' subsystem integration expertise, the result is the premier value in the industry for electronics packaging. Pixus offers backplane designs and chassis platforms in OpenVPX, CompactPCI, AdvancedTCA, MicroTCA, VME/64x, and custom architectures. The company also provides a vast ecosystem of embedded components including ejector handles & panels, card guides, rails, subracks, and more.

# OUR SERVICES

Pixus Technologies' services include customization, creative design, thermal simulation, signal integrity simulation/test, and more.

Our expertise from specialization in backplane design to mechanical precision, to detailed knowledge of embedded systems gives us unique perspective to offer creative solutions.

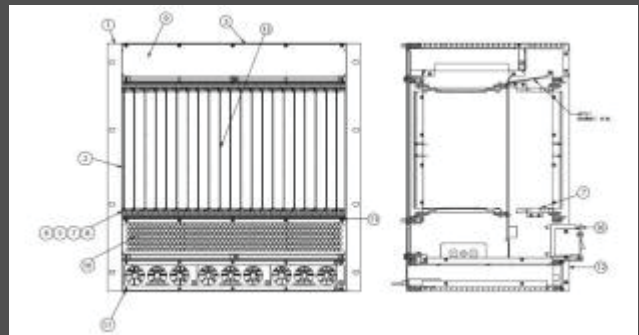
## CUSTOMIZATION

WE START FROM  
OUR CUSTOMER'S  
REQUIREMENT

### FRONT PANEL CUSTOMIZATION AND ASSEMBLIES

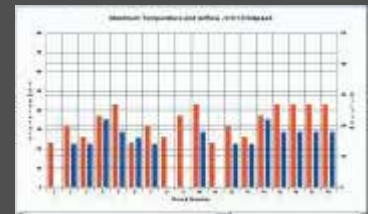
Services for the front panels include custom design, stamping/milling, painting/silkscreening, assembly and single part number ordering. Contact Pixus for custom handle/panel services.

### MODIFIED STANDARDS AND CUSTOMIZATION



Pixus Technologies' focus allows our customers to supply the application while we provide a reliable architecture solution on time.

### THERMAL SIMULATION



Using thermal analysis software and test equipment, Pixus is able to provide thermal management analysis of the enclosures.

### BACKPLANE SIMULATION/ CHARACTERIZATION

Pixus Technologies can perform pre-design simulation and post-design characterization testing to confirm superior backplane performance.





## BENEFITS

- High quality Germany and North American designs
- Low-cost manufacturing at top enclosure center in the world, superior quality and consistency
- Customization expertise, lower volumes accepted
- Focus on superior service and on-time delivery
- ITAR-compliant, Mil/Aero expertise

# MAKING IT HAPPEN



Military/Aerospace -- mainly Open-VPX, VME/64x, CompactPCI, and AdvancedTCA architectures.



Medical -- mainly VME/64x, VXS, CompactPCI and custom architectures.



Transportation -- mainly VME/64x, CompactPCI, and custom architectures.



Industrial, Energy -- mainly VME/64x, CompactPCI, MicroTCA and small form factor architectures.



Test & Measurement -- mainly VME/64x, CompactPCI, and PXI architectures.

## System solutions

Industrial environment.....	Laboratory equipment .....
Telecommunications .....	
Differentiated environment.....	

## Product overview

ATCA/MicroTCA.....	Subracks .....
cPCI rack-mount systems for VMEbus.....	Instrument cases/system enclosures .....
Rack-mount systems for industrial PCs .....	
Power supplies.....	

## ATCA/MTCA

ATCA.....	MicroTCA accessories.....
ATCA accessories .....	ATCA climate control solutions.....
AdvancedMC.....	
MicroTCA .....	

## Rack-mount systems for CPCI and VMEbus

cPCI rack-mount system, Slim-Box Vario.....	VME64x rack-mount systems, Slim-Box Vario .....
cPCI rack-mount systems, Ripac.....	VMEbus rack-mount systems, Ripac.....
cPCI backplanes.....	VMEbus backplanes.....
cPCI/VM Ebus MPS monitoring.....	cPCI/VMEbus accessories.....

## Rack-mount systems for industrial PCs

ATX Ripac aluminium.....	ATX with front connections for 482.6 mm (19") installation .....
ATX sheet steel.....	ATX with front connections for wall mounting .....
ATX Economy with front door.....	Accessories .....
Modular system AT/ATX (Vario) Economy with front door.....	

## Power supplies

Ripac power supplies – Open Frame .....	AT/ATX power supplies .....
Ripac power supplies, plug-in .....	Redundant power supply .....
cPCI power supplies .....	
Uninterruptible power supply .....	

## Subracks

Ripac EASY.....	Ripac Vario Mobil.....
Ripac Vario.....	Subrack components.....
Ripac Vario EMC.....	Subrack climate control .....
Ripac Compact.....	Subrack accessories .....

## Instrument cases/system enclosures

RiBox system enclosures.....	RiCase 269.2 mm (1/2 19").....
Ripac Vario-Module .....	RiCase 482.6 mm (19").....
Ripac Vario-Module EMC.....	RiCase accessories .....
Ripac Vario-Module accessories.....	

## Enclosures, cases and climate control

Wall-mounted enclosures .....	Rack-mounted fan .....
Electronic enclosures .....	Centrifugal fan .....
Mobile workstation RiLab II.....	Operation and monitoring .....
Power supply .....	

## Complete, systematic expertise

Enclosure systems .....	IT solutions .....
Power distribution .....	Communication systems.....
System climate control.....	

## Technical details

ATCA.....	List of model numbers .....
Power supplies.....	Index .....
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**Boost your efficiency with  
our product expertise**



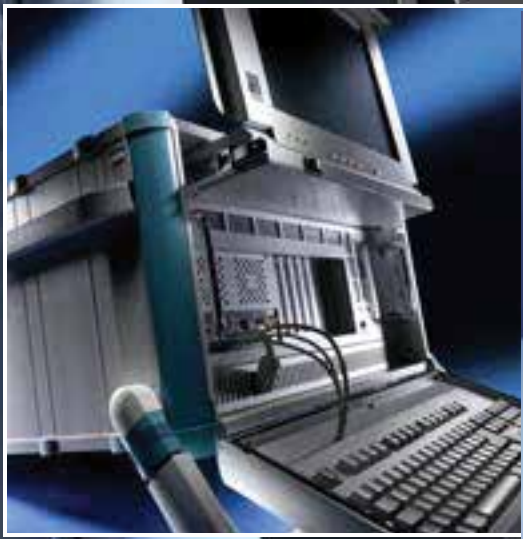


Subracks, system solutions,  
instrument cases, enclosure  
systems.

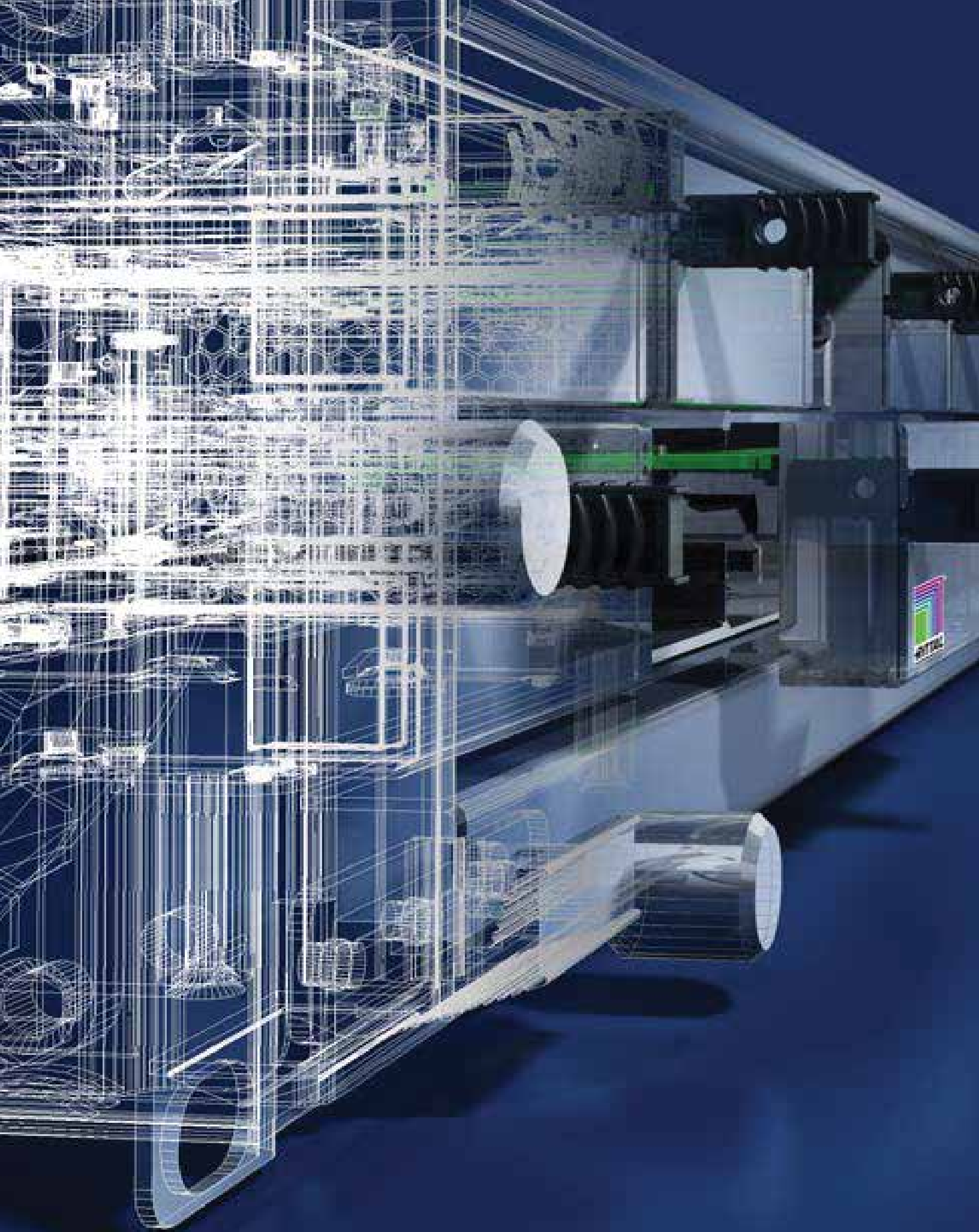
From individual components  
through to complete systems:  
Product expertise from a single  
source = greater efficiency.

Pixus Technologies is a leading supplier  
of electronic packaging. We owe our  
success in part to our comprehensive  
product expertise and solutions  
that address market and  
standard-specific requirements  
as well as individual customer  
requests.

The complex MPS systems solutions  
for OpenVPX, MicroTCA,  
AdvancedTCA, CompactPCI, and  
VME/64x up to Level 4 are a typical  
example.







**Global = Faster, better  
more efficient**



Eckental, Germany



Shanghai, China



Waterloo, Ontario (Canada)

“Electronic packaging in industry”

# Productivity

Your factory within a factory: In an industrial environment, sensitive electronics need high-quality protection, a suitable enclosure, and an infrastructure precisely tailored to the application. Only the right packaging concept for electronics can guarantee **comprehensive availability and hence a high level of productivity.**

We provide a unique modular system for technology packaging, the only one of its kind in the world.

Subracks, MPS system solutions, 482.6 mm (19”) enclosures and cases.

**Everything you need to reliably package your electronics with precision, efficient climate control, continuous power supply and perfect operation for maximum added value.**





“Electronic packaging for telecommunications”

# Data Speed

Super-fast data transfer and almost 100 % system availability – that is the goal.

To meet these exacting demands, Pixus can offer the **perfect infrastructure** with an ingenious system package:

**ATCA (Advanced Telecom Computing Architecture)** rack-mounted systems are combined with state-of-the art **LCP (Liquid Cooling Package) climate control technology**. Supercomputers in professional electronic packaging are cooled using high-performance compact registers (up to 30 kW per LCP) with a **high level of energy efficiency**.

Both system components are accommodated in standard rack systems, Originally developed for the telecommunications sector, based on ATCA is also sure to be of interest to numerous other sectors (industrial automation, traffic guidance systems or medical technology).





## System example

B	Electronic packaging	Page
12	2 subracks Ripac Vario 3 U, 160 mm deep	p.101
13	Horizontal installation kit	p.125
14	Trim frame, vented, for horizontal installation kit	p.126
15	2 subracks Ripac Vario 6 U, 160 mm deep	p.101
16	Vertical assembly kits	p.125
17	Front panels, handles	p.139
18	Guide rails	p.127
19	Box type plug-in units	p.155
20	Front panels	p.151
21	Rack-mounted fan between the subracks	p.198
22	– Fan	p.190
23	– Drive chassis	p.154



Subrack Ripac Vario 3U





“Electronic packaging for laboratory equipment”

# Outstanding Results

Innovations, optimizations, practicability, testing. The aim of a laboratory is to achieve outstanding results. **To achieve this, it needs outstanding equipment.**

This also includes technology packaging. As well as stationary components (racks, climate control, power supply), Pixus also offers **RiCase, a world-class instrument case** for mobile testing and development electronics. Equipped with rack-mount system, fans, power pack, backplane and comprehensive system accessories, it offers the ultimate in individual configuration, flexible adaptation, and protection of the active components inside. **We develop, test, manufacture and assemble the laboratory case precisely to your requirements.**

Ready to plug & play, and specifically tailored to give you added value and outstanding results.



## Effective through-flow

Climate control is more than just a question of the technology used. Optimum flow conditions of the cooling air are pivotal in preventing heat accumulation and hot spots.

- Effective cooling with diagonal air routing.
- Minimal air resistance thanks to flow-optimized inlet and outlet grilles and guide rails.

## Ergonomic handling

The exceptionally robust yet lightweight aluminium enclosure offers a full range of options for flexible laboratory use.

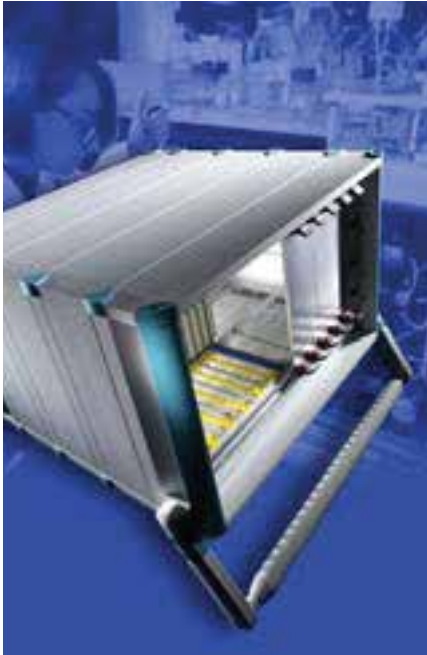
- Support stands adjustable on a 30° pitch pattern. Also optionally available with keyboard lid.
- Horizontal carrying handles for easy, safe transportation.
- Non-slip stability and stackability thanks to the material and form of the corner caps.

## Individual configuration

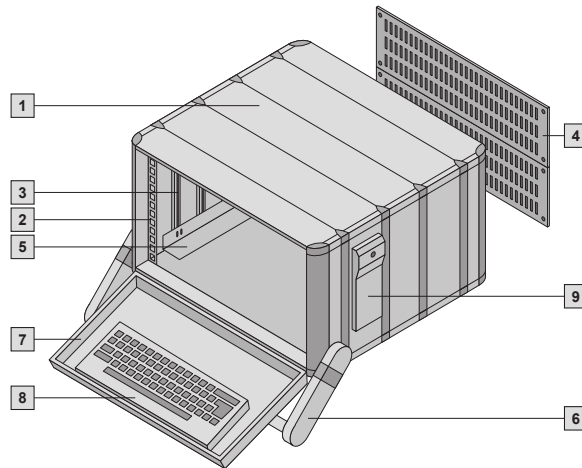
The perfect “safe” for valuable electronics.

- Depth-variable installation of 482.6 mm (19”) mounting brackets.
- Individually configured Ripac Vario subracks (slots, power pack, backplane, fan).
- Optional 482.6 mm (19”) component mounting on both sides, thanks to the symmetrical layout.

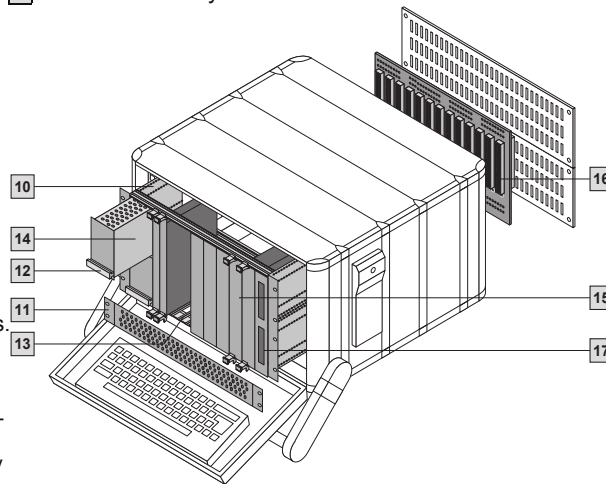
## Laboratory equipment



A Instrument case



B Rack-mounted system



### RiCase – the all-metal instrument case for 482.6 mm (19") rack mounts

RiCase is 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.
- Depth-variable 482.6 mm (19") installation: Slide-in strips simply slide into the required profile channel to facilitate any required attachment.

## Product Overview

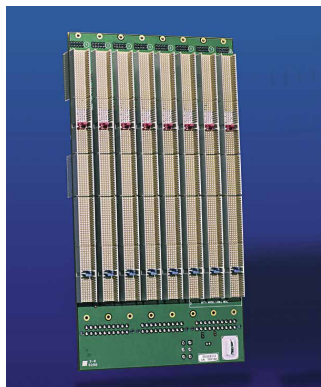


### Fully assembled, pre-wired and tested.

Pixus Technologies offers you "complete know-how" in the professional electronic packaging sector. From variable subrack systems, to a variety of enclosure solutions, operation and monitoring solutions, backplanes, power supplies, and climate control components, through to complete microcomputer systems for VME64x cPCI, ATCA, or MTCA.

### The complete range for electronic packaging

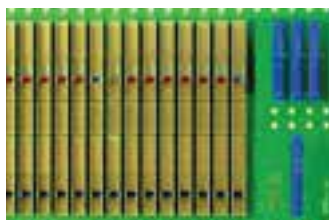
- Microcomputer systems (ATCA, MTCA, cPCI, VME, VME64x)
- Backplanes
- Power supplies
- Subrack systems
- System enclosures/instrument cases
- Electronic enclosures
- Climate control solutions



### cPCI Backplanes 7U with H110

Slots	H.110 connected to system slot			H.110 not connected to system slot			Page
	cPCI design	H.110 design	Model No. RP	cPCI design	H.110 design	Model No. RP	
3	SE	SE	<b>3688.508</b>	S	S	<b>3688.427</b>	63
4	SE	SBME	<b>3688.507</b>	S	SB	<b>3688.426</b>	63
5	SE	SBME	<b>3687.875</b>	S	SB	<b>3688.506</b>	63
6	SBME	SBME	<b>3687.874</b>	SB	SB	<b>3688.505</b>	63
7	SBE	SBME	<b>3687.873</b>	SBE	SB	<b>3688.504</b>	63
8	S	SBME	<b>3687.877</b>	S	SB	<b>9805.494</b>	63

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



### Backplanes 7U, Switch Fabric to PICMG 2.16

Width	Number of slots	Description of slots	Model No. RP	Page
32 HP	8	1 Fabric slot 6 node slots with CPCI and H.110 1 host slot	<b>3689.188</b>	64
32 HP	8	see RP 3689.188, but without H.110	<b>3686.414</b>	64
64 HP	16	1 Fabric slot 6 node slots with CPCI and H.110 1 host slot 1 Fabric slot 6 node slots with CPCI and H.110 1 host slot 3 slots for power supplies	<b>3686.396</b>	64
84 HP	16	see RP 3686.396, but without H.110	<b>3689.186</b>	64
84 HP	21	7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110, without CPCI 1 Fabric slot 7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110, without CPCI 1 Fabric slot 1 alarm slot	<b>3686.397</b>	64
84 HP	21	see RP 3686.397, but without H.110	<b>3689.190</b>	64
84 HP	21	see RP 3686.397, but without CPCI	<b>3689.191</b>	64



### Modular cPCI bridge

Description	Model No. RP	Page
64-bit CPCI bridge	<b>3686.571</b>	65



### Modular low profile bridge

Design	Bit	Model No. RP	Page
left-right	32	<b>3689.210</b>	65
right-left	32	<b>3689.211</b>	65
left-right	64	<b>9810.637</b>	65
right-left	64	<b>9812.625</b>	65
right-left	64	<b>3687.880<sup>1)</sup></b>	65

<sup>1)</sup> For backplane H.110  
 Only suitable for use in conjunction with low profile backplanes.



### cPCI Power supply backplane bridge

Description	Model No. RP	Page
<b>3 U/3.5 U, 16 HP</b>		
1 x plug-in power supply with Positronic connector, 47-pin	9905.105	66
3 x plug-in power supplies with Positronic connector, 47-pin	9904.131	66
2 x plug-in power supplies with Positronic connector, 47-pin	3688.603	66
ATX (12") cable harness	9810.337	66
ATX (16") cable harness	3686.570	66
ATX (20") cable harness	9810.338	66
<b>6 U/6.5 U, 8 HP<sup>1)</sup></b>		
1 x plug-in power supply with Positronic connector, 47-pin	3688.607	67
ATX (12") cable harness	9810.337	67
ATX (16") cable harness	3686.570	67
ATX (20") cable harness	9810.338	67
<b>6 U/6.5 U, 16 HP<sup>1)</sup></b>		
2 x plug-in power supplies with Positronic connector, 47-pin	3688.608	68
ATX (12") cable harness	9810.337	68
ATX (16") cable harness	3686.570	68
ATX (20") cable harness	9810.338	68

<sup>1)</sup> Extended delivery times.

### Backplane 3U Monolithic pwith power supply connector

Slots	Connector Positronic 47-pin	ATX	Model No. RP	Page
2 <sup>1)</sup>	1	0	3689.329	69
4	2	1	3689.330	69
6	3	1	3689.331	69
8	4	1	3689.332	69

System slot on right 64 bit with rear I/O, V I/O: +5.0 V. H.110 not connected to system slot.

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



### VME64x Rack-mount systems, Slim-Box Vario

Slots	U	Depth mm	Installation space for board depth mm	Model No. RP		Page
				with backplane and power supply 200 W	without backplane, with power supply 300 W	
4 (horizontal)	2	300	160	9912.354	–	72
8 (horizontal)	4	300	160	–	9912.484	72



### VME/VME64x Rack-mount systems, Ripac

Slots (version)	U	For	Depth mm	Wiring space depth mm	For PCB	Model No. RP	Page
						MPS system	
5 (horizontal)	3	VME	405	210	6 U x 160 mm	9910.949	73
5 (horizontal)	3	VME64x	405	210	6 U x 160 mm	9910.950	73
7 (horizontal)	4	VME	405	210	6 U x 160 mm	9910.954	73
7 (horizontal)	4	VME64x	405	210	6 U x 160 mm	9910.955	73
12	4 (3 + 1)	VME	405	210	3 U x 160 mm	9909.484	74
12	7 (6 + 1)	VME	405	210	3/6 U x 160 mm	9910.956	74
12	7 (6 + 1)	VME64x	405	210	3/6 U x 160 mm	9910.957	74
12	7 (6 + 2 x 1/2)	VME	405	210	6 U x 160 mm	9910.958	75
12	7 (6 + 2 x 1/2)	VME64x	405	210	6 U x 160 mm	9910.959	75
12 (with radial fan)	9 (6 + 2 x 1 1/2)	VME64x	290.5	85.5	6 U x 160 mm	9910.960	76





### VMEbus Backplanes VME64x

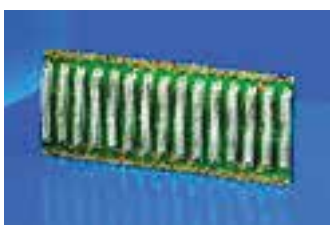
Slots	Dimensions mm		Model No. RP		Page
	Width	Height	without P0 connector	with P0 connector	
<b>6U</b>					
2	39.5	261.7	9912.423	9912.410	79
3	59.5	261.7	9912.424	9912.411	79
4	80	261.7	9912.425	9912.362	79
5	100	261.7	3687.608	3687.609	79
6	120.5	261.7	9912.426	9912.412	79
7	141	261.7	3687.610	3687.611	79
8	161.5	261.7	9912.427	9912.413	79
9	181.5	261.7	9904.930	9904.932	79
10	202	261.7	9904.931	9904.933	79
11	222.5	261.7	9912.428	9912.414	79
12	242.5	261.7	3686.634	3686.473	79
13	263	261.7	9912.429	9912.415	79
14	283	261.7	9912.430	9912.416	79
15	303.5	261.7	9912.431	9912.417	79
16	324	261.7	9912.432	9912.418	79
17	344	261.7	9912.433	9912.419	79
18	364.5	261.7	9912.434	9912.420	79
19	385	261.7	9912.435	9912.421	79
20	405	261.7	9912.436	9912.422	79
21	425.5	261.7	3686.635	3686.474	79
<b>6.5U</b>					
5	100	283.7	9910.012	9910.007	79
7	141	283.7	9910.013	9910.008	79
9	181.5	283.7	9910.014	9910.009	79
10	202	283.7	9904.928	9904.929	79
12	242.5	283.7	9910.015	9910.010	79
21	425.5	283.7	9910.016	9910.011	79



### Backplanes VME J1/J2 Monolithic

Slots	Dimensions mm		Model No. RP	Page
	Width	Height		
2	39.5	261.7	3686.495	
3	59.5	261.7	3686.496	
4	80	261.7	3686.497	
5	100	261.7	3686.498	
6	120.5	261.7	3686.499	
7	141	261.7	3686.500	
8	161.5	261.7	3686.501	
9	181.5	261.7	3686.502	
10	202	261.7	3686.503	
11	222.5	261.7	3686.504	

Slots	Dimensions mm		Model No. RP	Page
	Width	Height		
12	242.5	261.7	3686.505	80
13	263	261.7	3686.506	80
14	283	261.7	3686.507	80
15	303.5	261.7	3686.508	80
16	324	261.7	3686.509	80
17	344	261.7	3686.510	80
18	364.5	261.7	3686.511	80
19	385	261.7	3686.512	80
20	405	261.7	3686.513	80
21	425.5	261.7	3686.514	80



### Backplanes VME J1 system bus

Slots	Dimensions mm		Model No. RP	Page
	Width	Height		
3	59.5	128.4	3686.555	
4	80	128.4	3686.556	
5	100	128.4	3686.557	
6	120.5	128.4	3686.558	
7	141	128.4	3686.559	
8	161.5	128.4	3686.560	
9	181.5	128.4	3686.561	
10	202	128.4	3686.562	

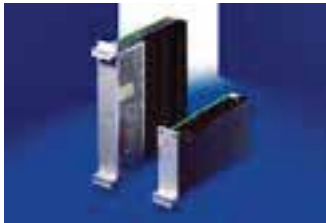
Slots	Dimensions mm		Model No. RP	Page
	Width	Height		
12	242.5	128.4	3686.563	81
13	263	128.4	3686.564	81
14	283	128.4	3686.565	81
15	303.5	128.4	3686.566	81
18	364.5	128.4	3686.567	81
20	405	128.4	3686.568	81
21	425.5	128.4	3686.569	81



**VME**  
**Backplanes VME J2 expansion bus**

Slots	Dimensions mm		Model No. RP	Page
	Width	Height		
3	59.5	128.4	<b>3686.585</b>	81
4	80	128.4	<b>3686.586</b>	81
5	100	128.4	<b>3686.587</b>	81
6	120.5	128.4	<b>3686.588</b>	81
7	141	128.4	<b>3686.589</b>	81
8	161.5	128.4	<b>3686.590</b>	81
9	181.5	128.4	<b>3686.591</b>	81
10	202	128.4	<b>3686.592</b>	81

Slots	Dimensions mm		Model No. RP	Page
	Width	Height		
12	242.5	128.4	<b>3686.593</b>	81
13	263	128.4	<b>3686.594</b>	81
14	283	128.4	<b>3686.595</b>	81
15	303.5	128.4	<b>3686.596</b>	81
18	364.5	128.4	<b>3686.597</b>	81
20	405	128.4	<b>3686.598</b>	81
21	425.5	128.4	<b>3686.599</b>	81



**Power Supplies**  
**Power supplies for VME plug-in**

Watts	Width (HP)	Height (U)	Output voltage/output current			Model No. RP		Page
			Output 1	Output 2	Output 3	Power supply	Front panel	
130	10	3	5 V/14 A	+12 V/5 A	-12 V/2 A	<b>3686.469</b>	<b>3685.304</b>	89
160	12	3	5 V/20 A	+12 V/5 A	-12 V/2 A	<b>3686.470</b>	<b>3685.305</b>	89
160	8	6	5 V/20 A	+12 V/5 A	-12 V/2 A	<b>3686.471</b>	<b>3686.472</b>	89
270	12	6	5 V/35 A	+12 V/6 A	-12 V/2 A	<b>3685.306</b>	<b>3685.307</b>	89



**Power supplies for cPCI plug-in**

Watts	Width (HP)	Height (U)	Output voltage/output current				Output current Output 1 + 2	Model No. RP		Page
			Output 1	Output 2	Output 3	Output 4		AC power supply	DC power supply	
175	8	3	5 V/25 A	3.3 V/20 A	12 V/6 A	-12 V/1 A	30 A max.	<b>3688.534</b>	<b>3688.537</b>	90
200	8	3	5 V/30 A	3.3 V/25 A	12 V/6 A	-12 V/1 A	38 A max.	<b>3688.694</b>	<b>3688.655</b>	90
250	8	3	5 V/33 A	3.3 V/33 A	12 V/6 A	-12 V/1 A	38 A max.	<b>3688.695</b>	<b>3688.696</b>	90
350	8	6	5 V/40 A	3.3 V/40 A	12 V/9 A	-12 V/1 A	80 A max.	<b>3688.528</b>	<b>3688.530</b>	90



**cPCI power supply plug-in**

Watts	Height (U)	Width (HP)	Model No. RP		Page
			Power supply	Front panel for power supply	
180	3	12	<b>3686.682</b>	<b>3685.330</b>	91



**Subracks  
Ripac EASY; 3U, 6U aluminium**

Side panel depth mm	Max. PCB depth mm	Model No. RP				Page
		For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	
175	160	<b>3634.100</b>	<b>3634.150</b>	<b>3634.180</b>	<b>3634.230</b>	100
235	220	<b>3634.110</b>	<b>3634.160</b>	<b>3634.190</b>	<b>3634.240</b>	100
295	280	<b>3634.120</b>	<b>3634.170</b>	<b>3634.200</b>	<b>3634.250</b>	100
355	340	<b>3634.130</b>	–	<b>3634.210</b>	–	100
415	400	<b>3634.140</b>	–	<b>3634.220</b>	–	100



**Subrack  
Ripac Vario**

**3 U, 6 U, 9 U (EMC-upgradable)**

Side panel depth mm	Max. PCB depth mm	Model No. RP						Page
		3U		6U		9U		
		For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	
185	160	<b>3684.020</b>	<b>3684.034</b>	<b>3684.043</b>	<b>3684.056</b>	–	–	101
225	160	<b>3684.021</b>	<b>3684.035</b>	<b>3684.044</b>	<b>3684.057</b>	–	–	101
245	220	<b>3684.022</b>	<b>3684.036</b>	<b>3684.045</b>	<b>3684.058</b>	–	–	101
285	220	<b>3684.023</b>	<b>3685.281</b>	<b>3684.046</b>	–	–	–	101
305	280	<b>3685.231</b>	<b>3685.233</b>	<b>3685.238</b>	<b>3685.240</b>	–	–	101
345	280	<b>3684.024</b>	–	<b>3684.047</b>	–	<b>3684.051</b>	<b>3684.059</b>	101
365	340	<b>3685.232</b>	<b>3685.234</b>	3685.239	–	–	–	101
405	340	<b>3684.025</b>	–	<b>3684.048</b>	–	<b>3684.052</b>	<b>3684.060</b>	101
465	400	<b>3684.026</b>	–	3684.049	–	<b>3684.053</b>	<b>3684.061</b>	101
525	400	<b>3684.027</b>	–	<b>3684.050</b>	–	<b>3684.054</b>	–	101
585	400	–	–	–	–	<b>3684.055</b>	–	101

**4 U, 7 U (EMC-upgradable)**

Side panel depth mm	Max. PCB depth mm	Model No. RP						Page
		4U (3 + 1)		4U (3 + 2 x 1/2)		7U (6 + 1)	7U (6 + 2 x 1/2)	
		For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	For backplane	For backplane	
245	220	<b>3685.235</b>	–	–	–	–	–	102
285	220	<b>3684.028</b>	<b>3684.037</b>	<b>3684.031</b>	<b>3684.040</b>	–	–	102
305	280	<b>3685.236</b>	–	–	–	–	–	102
345	280	<b>3684.029</b>	<b>3684.038</b>	<b>3684.032</b>	<b>3684.041</b>	–	–	102
365	340	<b>3685.237</b>	–	–	–	–	–	102
405	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>	102
465	400	–	–	–	–	<b>3684.065</b>	<b>3684.063</b>	102



### Ripac Vario EMC

#### 3 U, 6 U, 9 U

Side panel depth mm	Max. PCB depth mm	Model No. RP						Page
		3U		6U		9U		
		For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	
245	160	3684.128	3684.142	3684.156	3684.169	–	–	103
285	220	3684.129	3684.143	3684.157	3684.170	–	–	103
305	220	3685.241	3685.243	3685.242	3685.244	–	–	103
345	280	3684.130	3684.144	3684.158	3684.171	3684.162	3684.175	103
405	340	3684.131	3684.145	3684.159	3684.172	3684.163	3684.176	103
465	400	3684.132	3684.146	3684.160	3684.173	3684.164	3684.177	103
525	400	3684.133	3684.147	3684.161	3684.174	3684.165	3684.178	103
585	400	–	–	–	–	3684.166	3684.179	103

#### 4 U

Side panel depth mm	Max. PCB depth mm	Model No. RP				Page
		4U (3 + 1)		4U (3 + 2 x 1/2)		
		For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	
285	220	3684.134	3684.148	3684.137	3684.151	104
345	280	3684.135	3684.149	3684.138	3684.152	104
405	340	3684.136	3684.150	3684.139	3684.153	104

#### 7 U

Side panel depth mm	Max. PCB depth mm	Model No. RP				Page
		7U (6 + 1)		7U (6 + 2 x 1/2)		
		For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	
285	220	3684.187	3684.192	–	–	104
345	280	3684.188	3684.193	3684.189	3684.196	104
405	340	3684.180	3684.194	3684.190	3684.197	104
465	400	3684.181	3684.195	3684.191	3684.198	104

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



### Subrack Ripac Compact; 3U, 6U

Side panel depth mm	Max. board depth mm	Model No. RP					Page
		3U			6U		
		21 HP		42 HP		42 HP	
		Top-hat rail	Mounting plate	Top-hat rail	Mounting plate	Mounting plate	
<b>For backplane</b>							
225	160	3687.667	3687.669	3687.671	3687.673	3687.680	105
285	220	3687.668	3687.670	3687.672	3687.674	3687.681	105
<b>For backplane – EMC version</b>							
225	160	3687.682	3687.684	3687.686	3687.688	3687.690	105
285	220	3687.683	3687.685	3687.687	3687.689	3687.691	105



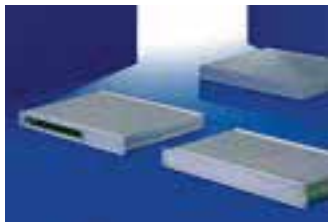
### Ripac Vario Mobil 3U, 6U, for mobile use

Side panel depth mm	Max. PCB depth mm	Model No. RP						Page
		3U			6U			
		For backplane	For connector IEC 60 603-2	For backplane – EMC version	For backplane	For connector IEC 60 603-2	For backplane – EMC version	
245	220	<b>3687.782</b>	<b>3687.780</b>	<b>3687.784</b>	<b>3687.783</b>	<b>3687.781</b>	<b>3687.785</b>	105



### Accessories for subracks

	Page
<b>Subracks, individual components</b>	
Side panels and flanges	109
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<b>Subrack climate control</b>	187
<b>Accessories for subracks</b>	
Components for EMC installation	123
Mounting kits	125
Guide rails	126
Keying/PCB ejectors	131
Covers	132
Front panels, handles	138
Ripac box type plug-in units – individual components	155
Assembly parts	158



### Instrument cases/system enclosures

#### RiBox system enclosures 1U

	Dimensions mm		Model No. RP	Page
	Width	Depth		
<b>Rack-mounted</b>				
	19" (482.6)	150	<b>3687.814</b>	162
	19" (482.6)	200	<b>3687.815</b>	162
	19" (482.6)	250	<b>3687.816</b>	162
	19" (482.6)	300	<b>3687.817</b>	162
	19" (482.6)	350	<b>3687.818</b>	162
<b>Rack-mount including assembly kit for double Euroboards</b>				
	19" (482.6)	250	<b>3684.072</b>	162
	19" (482.6)	350	<b>3684.073</b>	162
<b>Instrument case</b>				
	447	150	<b>3687.819</b>	162
	447	200	<b>3687.820</b>	162
	447	250	<b>3687.821</b>	162
	447	300	<b>3687.822</b>	162
	447	350	<b>3687.823</b>	162



### Ripac Vario-Module, system enclosures

U	Installation width (HP)	Depth mm	Packs of	Model No. VM			Page
				Basic enclosure		EMC basic enclosure	
2	42	250.4	1	3982.000		3984.000	164
2	42	310.4	1	3982.020		3984.020	164
2	63	250.4	1	3982.290		3984.290	164
2	63	310.4	1	3982.300		3984.300	164
2	84	250.4	1	3982.010		3984.010	164
2	84	310.4	1	3982.030		3984.030	164
3	42	250.4	1	3982.040		3983.040	166
3	42	310.4	1	3982.070		3983.070	166
3	63	250.4	1	3982.050		3983.050	166
3	63	310.4	1	3982.080		3983.080	166
3	84	250.4	1	3982.060		3983.060	166
3	84	310.4	1	3982.090		3983.090	166
3	84	370.4	1	3982.100		3983.100	166
4 (3 + 1)	84	250.4	1	3982.110		3983.110	168
4 (3 + 1)	84	310.4	1	3982.120		3983.120	168
4 (3 + 1)	84	370.4	1	3982.130		3983.130	168
6	84	310.4	1	3982.140		3983.140	168
6	84	370.4	1	3982.150		3983.150	168
6	84	430.4	1	3982.160		3983.160	168
7 (6 + 1)	84	310.4	1	3982.170		3983.170	168
7 (6 + 1)	84	430.4	1	3982.190		3983.190	168

Top and bottom covers must be ordered separately.

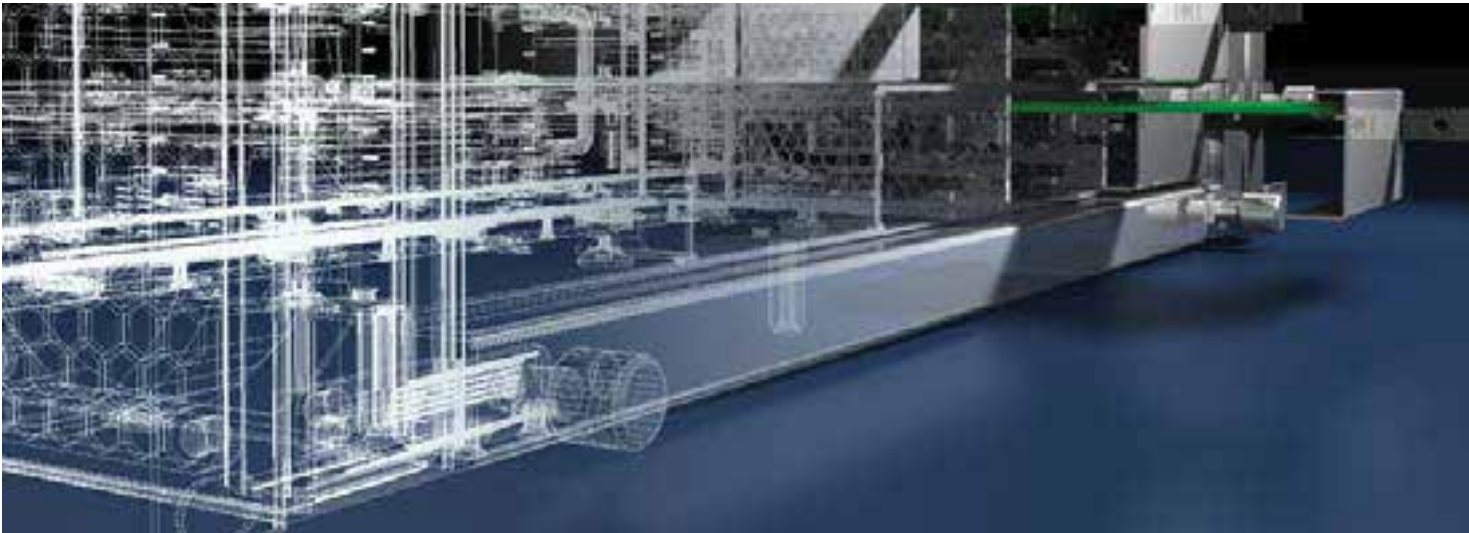


### Rittal RiCase, instrumentation

U	Depth mm		Model No. RC						Page
	Vented	Unvented	Vented RAL 5018	Unvented RAL 5018	Vented RAL 5012 <sup>1)</sup>	Unvented RAL 5012 <sup>1)</sup>	Vented RAL 7030 <sup>1)</sup>	Unvented RAL 7030 <sup>1)</sup>	
<b>Rittal RiCase 269.2 mm (1 1/2 19")</b>									
1	420	300	3750.110	3750.100	3750.112	3750.102	3750.114	3750.104	172
2	540	300	3750.220	3750.200	3750.222	3750.202	3750.224	3750.204	172
3	420	300	3750.350	3750.210	3750.352	3750.212	3750.354	3750.214	172
3	540	420	3750.360	3750.300	3750.362	3750.302	3750.364	3750.304	172
4	540	420	3750.450	3750.400	3750.452	3750.402	3750.454	3750.404	172
<b>Rittal RiCase 482.6 mm (19")</b>									
3	300	300	3750.330	3750.310	3750.332	3750.312	3750.334	3750.314	172
3	420	420	3750.340	3750.320	3750.342	3750.322	3750.344	3750.324	172
4	300	300	3750.430	3750.410	3750.432	3750.412	3750.434	3750.414	172
4	420	420	3750.440	3750.420	3750.442	3750.422	3750.444	3750.424	172
6	300	300	3750.630	3750.600	3750.632	3750.602	3750.634	3750.604	172
6	420	420	3750.640	3750.610	3750.642	3750.612	3750.644	3750.614	172
6	540	540	3750.650	3750.620	3750.652	3750.622	3750.654	3750.624	172
7	420	420	3750.720	3750.700	3750.722	3750.702	3750.724	3750.704	172
7	540	540	3750.730	3750.710	3750.732	3750.712	3750.734	3750.714	172
9	420	420	3750.920	3750.900	3750.922	3750.902	3750.924	3750.904	172
9	540	540	3750.930	3750.910	3750.932	3750.912	3750.934	3750.914	172
12	540	540	3750.030	3750.000	3750.032	3750.002	3750.034	3750.004	172

<sup>1)</sup> Extended delivery times.  
Packs of 1









## Product Overview



### cPCI Backplanes 3U for low profile bridge

Slots	Design	Model No. RP		Page
		32-bit	64-bit	
2	S	3689.300 <sup>1)</sup>	3689.307	62
3	SE	3689.301 <sup>1)</sup>	3689.308	62
4	SBME	3689.302 <sup>1)</sup>	3689.309	62
5	SBME	3689.303	3689.310	62
6	SBME	3689.304 <sup>1)</sup>	3689.311	62
7	SBE	3689.305 <sup>1)</sup>	3689.312	62
8	S	3689.306 <sup>1)</sup>	3689.313	62

S = Stand alone  
 B = Beginning segment  
 M = Middle segment  
 E = Ending segment  
<sup>1)</sup> Delivery times available on request.



### Backplanes 3.5U for low profile bridge

Slots	Design	Model No. RP		Page
		32-bit	64-bit	
2	SBE	–	3687.864	62
3	SE	3687.865	3686.578	62
4	SE	3687.863	3686.576	62
5	SE	3687.862	3686.575	62
6	SBME	3687.861	3686.548	62
7	SBE	3687.860	3686.547	62
8	S	3687.859	3686.546	62

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



### Backplanes 6U, 6.5U

Slots	Design	Model No. RP		Page
		32-bit	64-bit	
<b>Backplanes 6 U for low profile bridge</b>				
2	S	3689.314 <sup>1)</sup>	3689.321	62
3	SE	3689.315 <sup>1)</sup>	3689.322	62
4	SBME	3689.316 <sup>1)</sup>	3689.323	62
5	SBME	3689.317 <sup>1)</sup>	3689.324	62
6	SBME	3689.318 <sup>1)</sup>	3689.325	62
7	SBE	3689.319 <sup>1)</sup>	3689.326	62
8	S	3689.320 <sup>1)</sup>	3689.327	62
<b>Backplanes 6.5 U for low profile bridge</b>				
3	SE	–	3689.209	62
4	SE	–	3689.208	62
5	SBE	–	3689.207	62
6	SBME	–	3689.206	62
7	SBE	–	3689.205	62

S = Stand alone  
 B = Beginning segment  
 M = Middle segment  
 E = Ending segment  
<sup>1)</sup> Delivery times available on request.





**cPCI  
Rack-mount systems, Slim-Box Vario**

Slots	U	Depth mm	For rear I/O boards	Installation space for board depth mm	Model No. RP	Page
2 (horizontal)	1	300	■	160	9909.580	54
2 (horizontal)	1	300	■	160	9909.582	54
2 (horizontal)	2	300	■	160	9909.586	54
2 (horizontal)	2	300	–	160	9909.588	54
2 (horizontal)	3	300	■	160	9912.355	55
2 (horizontal)	3	300	■	160	9912.356	55
2 (horizontal)	4	300	■	160	9912.357	55
2 (horizontal)	4	300	■	160	9912.358	55



**Rack-mount systems, Ripac**

Slots (version)	U	Depth mm	Wiring space (depth mm)	For PCB	Model No. RP	Page
					MPS system	
5 (horizontal)	3	405	210	6U x 160 mm	9910.944	56
7 (horizontal)	4	405	210	6U x 160 mm	9910.945	56
8	4 (3 + 1)	405	210	3 Ux 160 mm	9910.946	57
8	7 (6 + 1)	405	210	6U x 160 mm	9910.948	57
8	7 (6 + 2 x 1/2)	405	210	6U x 160 mm	9910.947	58
8 (with radial fan)	9 (6 + 2 x 1 1/2)	290.5	85.5	6U x 160 mm	9909.483	59

# Product Overview - Electronic Components

## CPCI/VMEbus

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Rack-mount systems, Slim-Box Vario (CPCI) .....	Power supply backplanes .....
Rack-mount systems, Ripac (CPCI) .....	Backplane 9 U Monolithic .....
Backplanes (CPCI) .....	Rack-mount systems, Slim-Box Vario (VME64x) .....
Modular CPCI bridge .....	Rack-mount systems, Ripac (VME, VME64x) .....
Modular low profile bridge .....	Backplanes (VME, VME64x) .....

## Power supplies

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Ripac power supplies for VME – Open Frame .....	ATX power supplies .....
Ripac power supplies for VME, plug-in .....	Front panel for ATX power supply .....
Ripac power supplies for CPCI, plug-in .....	
CPCI power supplies – Open Frame .....	
CPCI power supplies, plug-in .....	

## Subracks

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Ripac EASY .....	Ripac Compact .....
Ripac Vario .....	Ripac Vario Mobil for mobile use .....
Ripac Vario EMC .....	Accessories for subracks .....

## Instrument cases/system enclosures

---

RiBox system enclosures 1U .....	Ripac Vario-Module EMC .....
Ripac Vario-Module .....	Rittal RiCase, instrument cases .....



## System Example

**Pixus components as illustrated by the system example  
“Electronic packaging for laboratory equipment”**

A	Instrument case	Page
1	Rittal RiCase 482.6 mm (19"), 7U	
2	482.6 mm (19") mounting bracket	
3	Threaded inserts	
4	Backplanes for ventilation (2 x 3U, 1 x 1U)	
5	Slide rails	
6	Support stand/carrying handle	
7	Keyboard lid (only in conjunction with support stand/carrying handle)	
8	482.6 mm (19") keyboards	
9	Interface flap	

B	Rack-mounted system	Page
10	Subrack Ripac Vario, 6U	
11	Front panel for ventilation, 1U	
12	Front panels/handles	
13	Card guides	
14	Box type plug-in units	
15	Front panels	
16	Backplane	
17	Drive chassis	



Keyboard lid  
(only in conjunction  
with support stand/carrying  
handle)



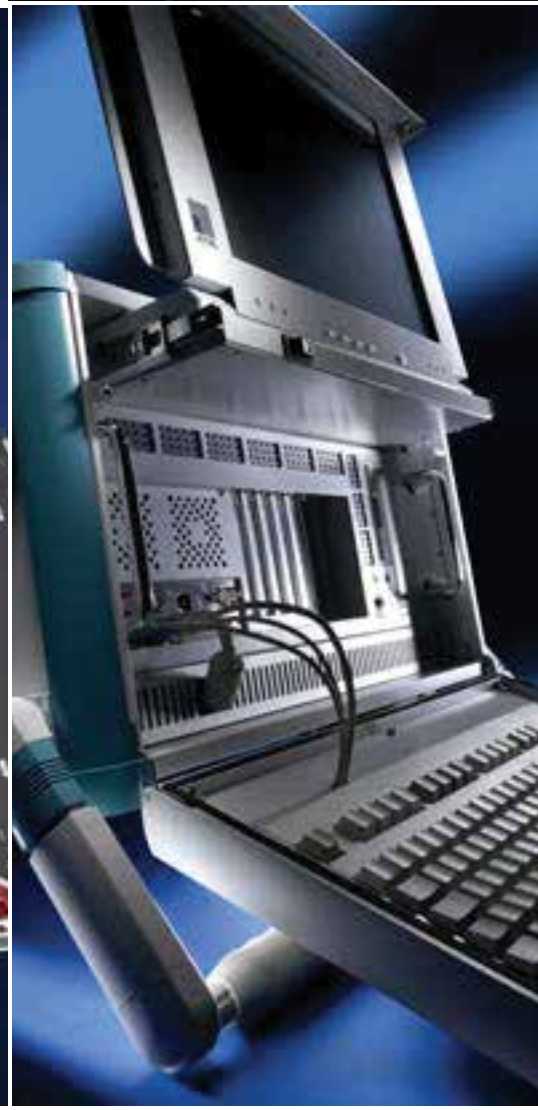
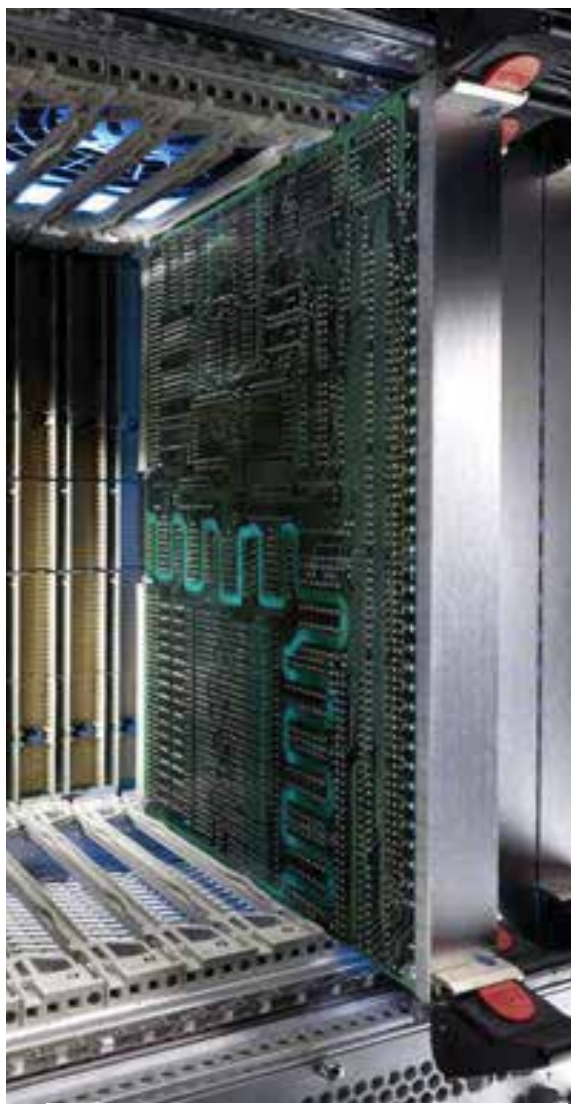
Subrack Ripac Vario,  
6U



Backplane



# ATCA Climate Control Systems



ATCA

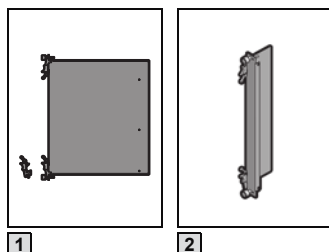


**ATCA face plate kit**

- With integral cover for component side and for board attachment
- Including foam EMC seal (stick-on)
- Including hot swap injector/extractor handles
- Customer-specific machining available on request

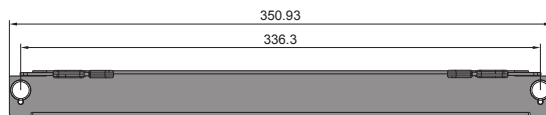
**Material:**  
Stainless steel

**Supply includes:**  
1 face plate, 2 handles, EMC seal, mounting screws.



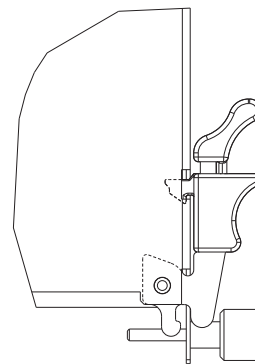
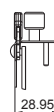
1

2



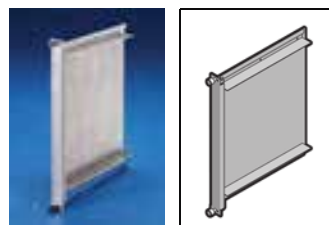
Face plate

**EMC**



Handle/microswitch

Description	U	HP	Packs of	Model No. RP
1 Face plate, front	8	6	1	9906.693
2 Face plate, rear	8	6	1	9910.379



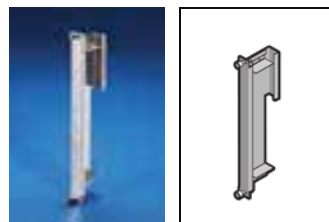
**ATCA filler panel kit**

- To conceal unused slots
- Optionally with or without air routing
- Including foam EMC seal (stick-on)

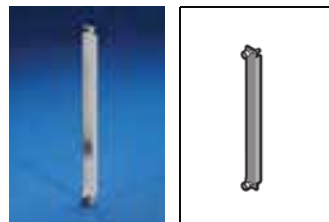
**Material:**  
Stainless steel

**Supply includes:**  
1 face plate, EMC seal, mounting screws.

1



2



3

Description	U	HP	Packs of	Model No. RP
1 Face plate, front, with air routing	8	6	1	9906.694
2 Face plate, rear, with air routing	8	6	1	9910.185
3 Face plate, front/rear, without air routing	8	6	1	9910.380

**EMC**



**Cable entry plates**

- For cable clamping and routing
- Attachment to the side panel
- Front cable entry plate with vent holes for optimum air infeed
- Folds down forwards to ensure easy access to the assemblies

Assembly	Packs of	Model No. RP
1 front	1	3666.310
2 rear	1	3666.311

## AdvancedMC Face plates



### AdvancedMC face plate kits

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

- Installation in MicroTCA systems or AMC carriers
- Conforms to AMC.0 R2.0
- Widths: Compact, Mid-Size, Full-Size
- Height: Single & Double
- 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 Zn  
 Light pipe, polycarbonate  
 Handle, die-cast Zn, 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.

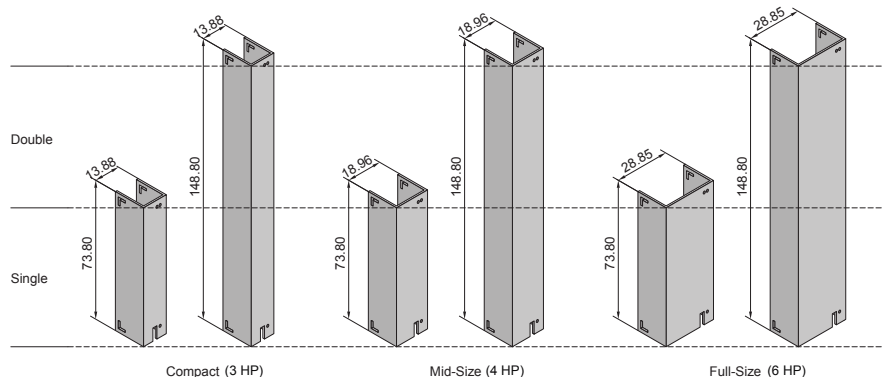
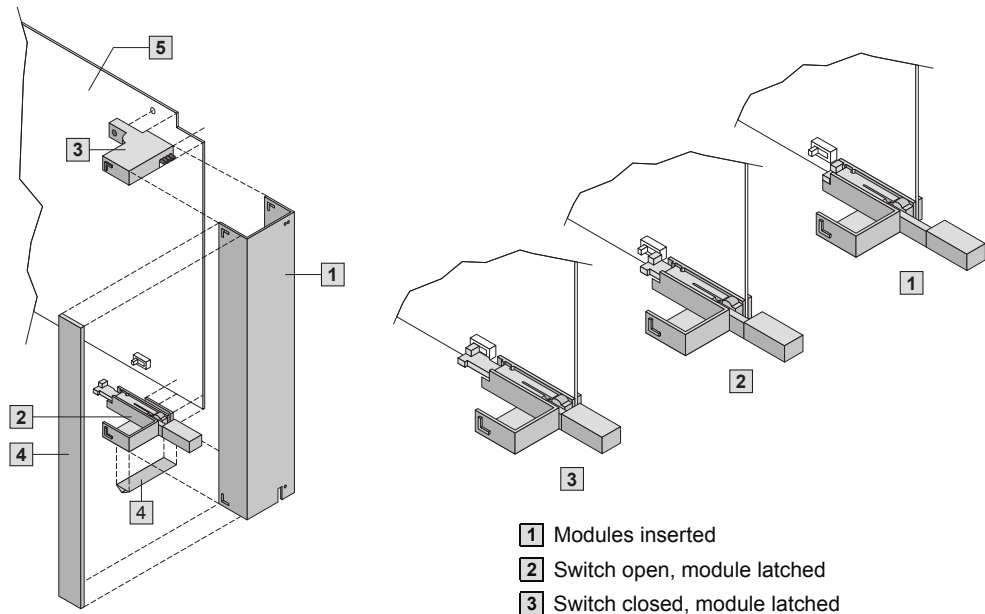
Design (H x W)	Packs of	Model No. RP
Single x Compact	1	9911.885
Single x Mid-Size	1	9911.889
Single x Full-Size	1	9911.886
Double x Compact	1	9911.887
Double x Mid-Size	1	9911.890
Double x Full-Size	1	9911.888

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

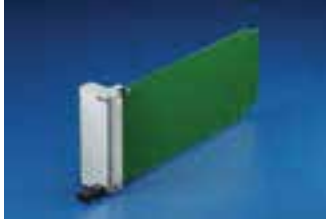
#### + Accessories:

AMC filler sheets, air baffle plates, conversion module

- 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



## 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:**  
FR4



Design	Packs of	Model No. RP
Single	1	9911.570
Double	1	9911.571



### 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	Model No. RP
Compact	1	9911.891
Mid-Size	1	9911.892
Full-Size	1	9911.893



### 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	Model No. RP
Compact	1	9907.699
Full-Size	1	9911.220



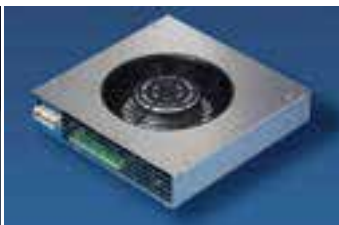


One of the major challenges posed by ATCA systems is heat management. The ATCA specification defines a heat loss of 200 W per slot. This means that a single ATCA shelf with 14 populated slots already has a maximum total heat loss of 2.8 kW, and the heat loss in an enclosure with three populated systems may therefore rise to more than 10 kW. Moreover, with clock frequencies likely to rise to the upper two-figure GHz range in the near future, the current methods of air cooling will struggle or even be completely unable to deal with the heat loss arising. In order to find a suitable solution, we need to face up to this situation now.

### Shelf cooling

For the majority of applications, air cooling is the preferred option. A distinction is made between push cooling and pull cooling. In push cooling, axial or diagonal fans press cold air into the system. In pull cooling, fans draw hot air out of the system. Due to the confined space and integration density, the pressure losses caused by ATCA boards are very high. Standard axial fans in a push or pull configuration

are less suitable, because they can cave in as the back-pressure rises. By contrast, radial fans specialise in these types of applications, although the throughput is slightly lower in free air.



ATCA specifies heat losses of up to at least 200 W per front board and 30 W per rear board, which translates to approximately 3 kW for a fully populated shelf with 14 boards.



The four high-capacity RiCool III blowers with 320m<sup>3</sup>/h ensure optimum climatic conditions. Incl. IPMI interface.

The redundancy and hot swap features ensure reliability, even in the event of a failure (FRU). Replaceable dust filter in the air inlet zone.

### CPU cooling

Cooling fluids benefit from the physical property of having a specific thermal capacity several times higher than air. As a result, it is possible to design very small cooling systems with a maximum cooling capacity and position them directly at the point of origination

(e. g. processors). This helps to minimise the threat of hotspots which dramatically shorten the service life of electronics.



Liquid connection – via simple insertion. When the card is inserted, board cooling is automatically integrated into the cooling circuit.

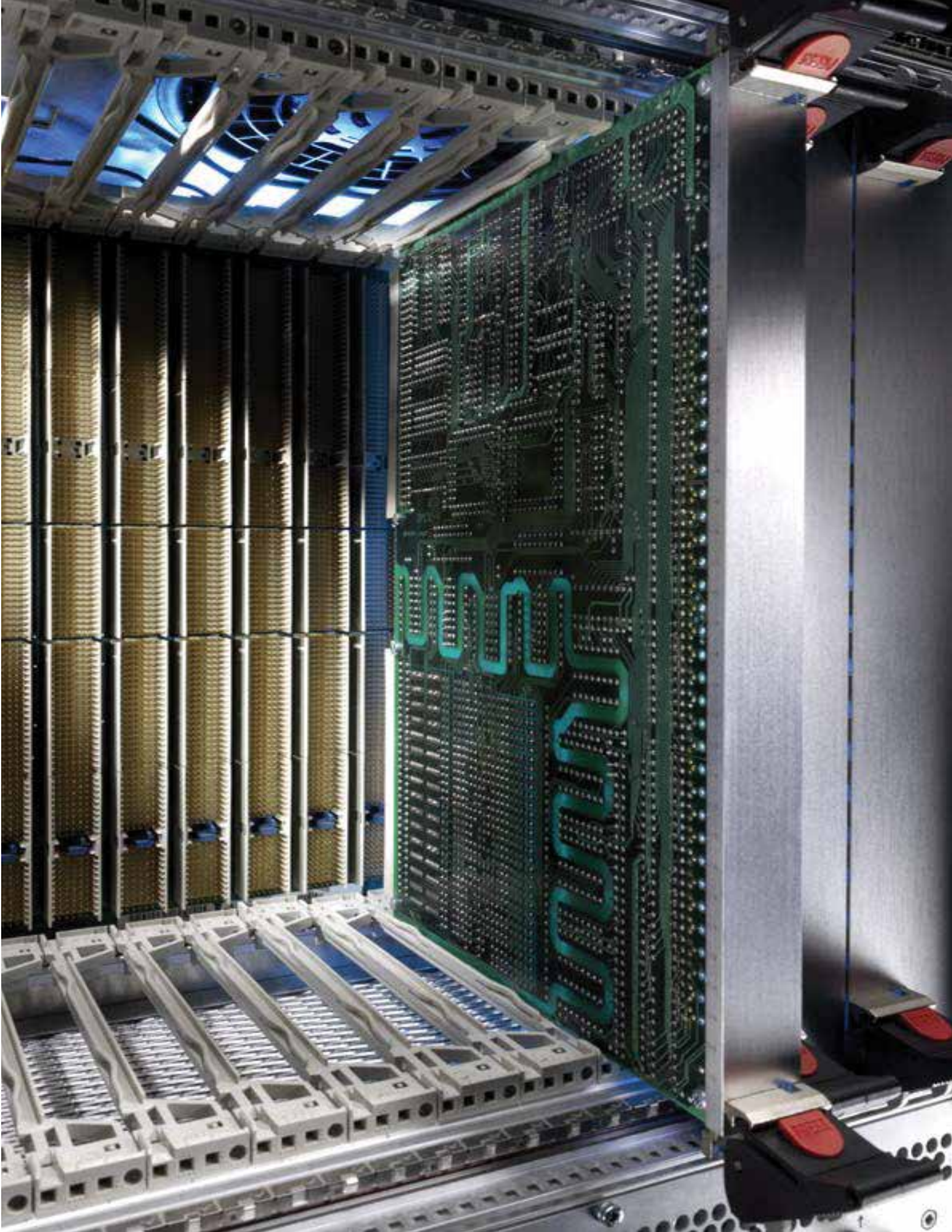


Reliable discharge of 70 % of heat loss. Up to 250 W per cm<sup>2</sup> at the hotspot.



Rapid board exchange without hose couplings. Horizontal distributor integrated into the shelf.







# Rack-mount systems for cPCI Serial, OpenVPX and VMEbus

cPCI	System			U								Rack-mount systems	Design	Page	
	VME/ VME 64x	ATX		1	2	3	4	5	6	7	9				13
■				■	■									Slim-Box Vario.....	54
■						■	■							Slim-Box Vario.....	55
■						■	■							Ripac .....5 slots, 7 slots, horizontal....	56
■							■			■				Ripac .....8 slots....	57
■										■				Ripac .....8 slots....	58
■											■			Ripac .....8 slots, with RiCool radial fan....	59
■														Backplanes.....	62
	■				■		■							Slim-Box Vario.....	72
	■					■	■							Ripac .....5 slots, 7 slots, horizontal....	73
	■						■			■				Ripac .....12 slots....	74
	■									■				Ripac .....12 slots....	75
	■										■			Ripac .....12 slots, with RiCool radial fan....	78
	■													Backplanes.....	79
■	■													MPS monitoring.....	83
■	■													Accessories.....	83



## Overview - Pixus systems for cPCI

### cPCI systems Slim-Box Vario



1, 2, 3, 4U/2, 4, 6, 8 slots  
See pages 54,55

#### Applications

Configuration of 482.6 mm (19") industrial computer systems to the cPCI specification for

- Telecommunications
- Automation

#### Design features

- 482.6 mm (19") rack-mounted system for horizontal installation of boards at the front and I/O boards at the rear
- 1U, 2U, 3U, 4U, 300 mm deep
- Standard cooling from left to right
- Sheet steel, spray-finished (black)
- Preconfigured systems including backplane and fan unit
- Fully assembled, wired and tested
- Installation of cPCI boards to cPCI spec. 2.0 Rev. 3.0

#### User benefits

- Horizontal installation of Euroboards/ double Euroboards
- Maximum installation with minimal space requirements
- 2/4/6/8 slots at the front for 160 mm boards and at the rear for 80 mm boards
- Hot swap-compatible power supplies AC or DC optional
- EMC and ESD protection
- Fully assembled, pre-wired and tested
- Integral cooling from left to right
- Modular assembly supports individual configurations
- Complies with cPCI spec. 2.0 Rev. 3.0, IEC 60 297-3-101, -102, -103



#### Individually configurable

Looking for an individual enclosure solution? Talk to us. We will select a suitable basic enclosure and populate it with your required components.

### Ripac cPCI systems



3U, 5 slots/4U, 7 slots horizontal  
See page 56

#### Applications

Configuration of 482.6 mm (19") industrial computer systems to the cPCI specification for

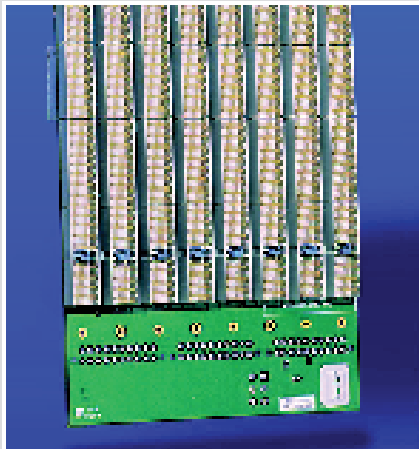
- Telecommunications
- Automation

#### Design features

- 482.6 mm (19") rack-mounted system for horizontal installation of double Euroboards
- 3 or 4U, 405 mm deep
- Clear-chromated aluminium
- Including backplane, power supply and fan in the rear panel
- Fully assembled, wired and tested
- Horizontal installation space for double Euroboards: 5 or 7 slots
- Installation of cPCI boards to cPCI spec. 2.0 Rev. 3.0

#### User benefits

- Horizontal installation of double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing from front to rear with fans in the rear panel
- Keyable guide rails
- Complies with cPCI spec. 2.0 Rev. 3.0, IEC 60 297-3-101, -102, -103



### cPCI systems



4U/7U, 8 slots  
See page 57

#### Applications

Configuration of 482.6 mm (19") industrial computer systems to the cPCI specification for

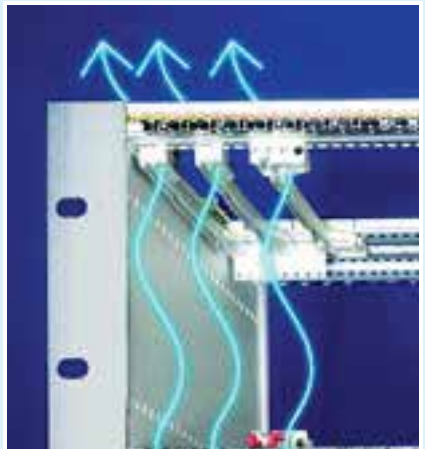
- Telecommunications
- Automation

#### Design features

- 482.6 mm (19") rack-mounted system for vertical installation of Euroboards/ double Euroboards
- 4 or 7U, 405 mm deep
- Clear-chromated aluminium
- Including backplane and power supply unit
- Fan module with 3 DC fans
- Fully assembled, wired and tested
- Installation space for Euroboards and double Euroboards: 8 slots
- Installation of cPCI boards to cPCI spec. 2.0 Rev. 3.0

#### User benefits

- Vertical installation of Euroboards/ double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Fan module ensures targeted air routing from bottom to top
- Keyable guide rails
- Complies with cPCI spec. 2.0 Rev. 3.0, IEC 60 297-3-101, -102, -103



**Ripac cPCI system**



**7U, 8 slots**  
See page 58

**Applications**

Configuration of 482.6 mm (19") industrial computer systems to the cPCI specification for

- Telecommunications
- Automation

**Design features**

- 482.6 mm (19") rack-mounted system for vertical installation of double Euroboards
- 7U, 405 mm deep
- Clear-chromated aluminium
- Including backplane, power supply and fan in the rear panel
- Fully assembled, wired and tested
- Installation space for plug-in boards: 8 slots
- Installation of cPCI boards to cPCI spec. 2.0 Rev. 3.0

**User benefits**

- Vertical installation of double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing from front to rear with DC fans in the rear panel
- Keyable guide rails
- Complies with cPCI spec. 2.0 Rev. 3.0, IEC 60 297-3-101, -102, -103

**Ripac cPCI systems**



**9U, 8 slots with RiCool and rear I/O**  
See page 59

**Applications**

Configuration of 482.6 mm (19") industrial computer systems to the cPCI specification for

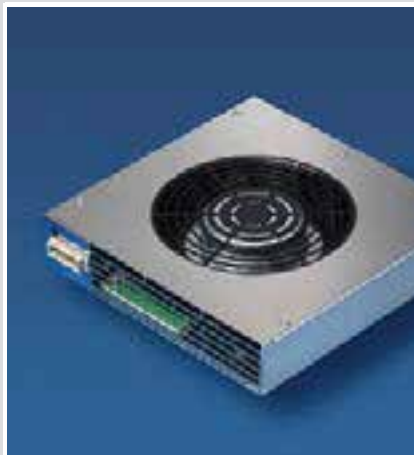
- Telecommunications
- Automation

**Design features**

- 482.6 mm (19") rack-mounted system for vertical installation of double Euroboards
- 9U, 290.5 mm deep, fitted at the rear for I/O modules
- Clear-chromated aluminium
- Including backplane, power supply and two RiCool radial fans (204 m<sup>3</sup>/h)
- Fully assembled, wired and tested
- Installation space for plug-in boards: 8 slots
- Installation of cPCI boards to cPCI spec. 2.0 Rev. 3.0

**User benefits**

- Vertical installation of double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing from front to rear
- I/O transition modules at the rear
- Keyable guide rails
- Effective ventilation with two RiCool radial fans (204 m<sup>3</sup>/h)
- Complies with cPCI spec. 2.0 Rev. 3.0, IEC 60 297-3-101, -102, -103





# Rack-mount systems for OpenVPX, cPCI Serial and VMEbus



Pixus supplies complete plug-and-play solutions for VME, OpenVPX, cPCI Serial and CompactPCI applications at a high level – up to Level 4. The systems are based on standardised components which may be individually combined, depending on requirements.

They are supplied complete with power supply, backplane, EMC and ESD protection features, as well as climate control; fully assembled, pre-wired and tested.



### EMC measures

**Conductive surface finish** of all system components. **EMC gaskets** of stainless steel make contact with the individual components. **EMC front panels** with EMC gaskets ensure reliable contact.



### ESD protection

**ESD pin** and **ESD contact** in the guide rail to discharge static charges before making contact with the board type plug-in unit. **ESD contact** in the PCB guide ensures permanent direct discharge via the PCB.

### Climate control

Maximum air flow, due to the narrow design of the guide rails and horizontal rails. **Individual air flow management** ensures targeted air routing and optimum heat dissipation. Optionally from bottom to top or from front to rear.

**High-performance RiCool fan** ensures optimum ventilation. 1U, hot swap-compatible 204 m<sup>3</sup>/h, including speed control and fault alarm signal.



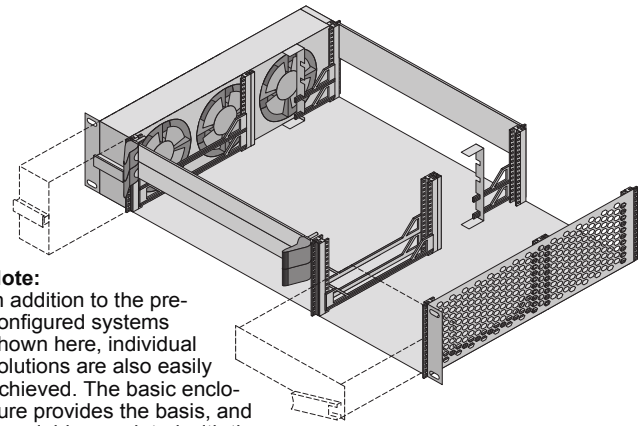
Systems for  
CompactPCI

Systems for  
VME/VME64x

### Overview of benefits

- Systems for the configuration of industrial computers to CompactPCI, OpenVPX, cPCI Serial, or VMEbus specifications
- Robust mechanical system
- Individual configurations available on request
- Fully assembled, pre-wired and tested, including backplane and power supply unit
- Individual airflow management
- Complies with IEC 60 297-3 and IEEE 1101.1/10/11 as well as CompactPCI spec. 2.0 Rev. 3.0 (PICMG)

Slim-Box Vario



**Note:**  
In addition to the pre-configured systems shown here, individual solutions are also easily achieved. The basic enclosure provides the basis, and is variably populated with the required components.

**Technical specifications:**

- Rack-mount enclosure 482.6 mm (19") for the horizontal installation of boards
- Front and rear 2 slots per U for cPCI boards
- Enclosure cooling from left to right

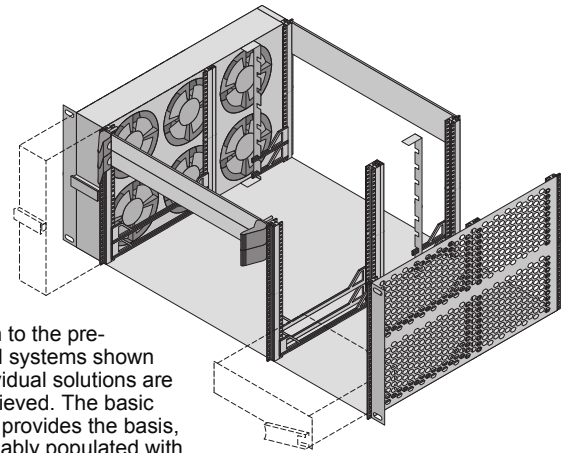
- EMC and ESD compatible design
- Includes fan tray
- Complies with IEC 60 297-3-101, -102, -103

**Material:**  
Sheet steel, spray-finished (black)

Slim-Box Vario cPCI For PCBs		1U			2U		
		6U x 160 With rear I/O 9909.580	6U x 160 With rear I/O 9909.582		6U x 160 With rear I/O 9909.586	3U x 160 Without rear I/O 9909.588	
<b>Model No. RP complete system</b>				Model No. RP			Model No. RP
Item	Package description						
1	Basic enclosure, EMC, fully assembled, 300 mm deep	1	1	9912.459	1	1	9912.048
2	ATX PSU control module, 3U x 4 HP, EMC (kit)	-	1	9913.998	-	-	9913.998
3	Rear panel for AC/DC ATX PSU (200 W), rear, 1U	-	1	9909.961	-	-	9912.050
4	AC Power Entry Module, 3U x 8 HP, IEC (kit)	1	-	9910.972	1	1	9912.288
5	Slim drive support (kit)	-	-	-	1	1	9912.289
6	Rails for standard 3U components (kit)	1	1	9912.464	-	-	9912.056
7	Front sub-division rails in 2 x 3U (kit)	-	-	9912.920	-	1	9912.053
8	Guide supports, rear I/O	1	1	9912.470	1	-	9912.054
9	Fan tray with air filter and 12 V DC fan, fully wired	1	1	9912.473	1	-	9909.191
10	Fan tray with air filter and 12 V DC alarm fan, fully wired	-	-	-	-	1	9909.194
<b>Monitoring</b>							
11	EMC front panel, 3U x 4 HP with MPS controller module	-	-	-	-	1	9909.193
12	MPS display module, EMC, 3U x 4 HP	-	-	-	-	1	9912.294
13	EMC front panel, 3U x 4 HP with MPS fan module	-	-	-	-	1	9912.293
<b>Power supplies/backplanes for plug-in power supplies</b>							
14	ATX PSU, AC/DC, wide range, 1U, 200 W	-	1	9907.585	-	-	-
15	Prepared for plug-in PSU, AC/DC, wide range, 3U, 200 W	(1)	-	3688.694	(1)	(1)	3688.694
16	PSU backplane 3U, single	1	-	9905.105	1	-	9905.105
17	PSU backplane 3U, dual	-	-	-	-	1	3688.603
<b>Guide rails/filler panels</b>							
18	Keyable guide rail, 160 mm, grey	2	2	3684.669	6	6	3684.669
19	Keyable guide rail, 160 mm, red, for system slots	2	2	3686.063	2	2	3686.063
20	Keyable guide rail, 160 mm, green, with offset, for PSU	2	-	3687.832	2	4	3687.832
21	Guide rail for rear I/O, 80 mm, grey, top	2	2	3687.936	4	-	3687.936
22	Guide rail for rear I/O, 80 mm, grey, bottom	2	2	3687.937	4	-	3687.937
23	Grounding bush + contact spring for rear I/O	4	4	3689.036	8	-	3689.036
24	ESD board contact spring	4	4	3684.978	8	8	3684.978
25	ESD contact spring for front panel	2	2	3684.979	4	4	3684.979
26	Guide rail, 4.4" for drive holder	-	-	-	2	2	3686.990
27	Filler panel, EMC, 3U x 8 HP (kit)	-	-	-	1	1	3685.182
28	Filler panel, EMC, 6U x 16 HP (kit)	-	-	-	-	1	3685.349
<b>Backplanes</b>							
29	Backplane cPCI, 3U, 4 slots, system slot on right, 64 bit	-	-	-	-	1	3689.309
30	Backplane cPCI, 6U, 2 slots, system slot on right, 64 bit	1	1	3689.321	-	-	-
31	Backplane cPCI, 6U, 4 slots, system slot on right, 64 bit	-	-	-	1	-	3689.323
32	Backplane 9U, Monolithic, 2 slots	(1)	-	3689.329	(1)	(1)	3689.329
33	Backplane 9U, Monolithic, 3 slots	-	-	-	(1)	(1)	3689.330
34	Backplane 9U, Monolithic, 4 slots	-	-	-	(1)	(1)	3689.331

(1) Quantity not included with the supply!

Slim-Box Vario



**Note:**  
In addition to the pre-configured systems shown here, individual solutions are easily achieved. The basic enclosure provides the basis, and is variably populated with the required components.

**Technical specifications:**

- Rack-mount enclosure 482.6 mm (19") for the horizontal installation of boards
- Front and rear 2 slots per U for cPCI boards
- Enclosure cooling from left to right

- EMC and ESD compatible design
- Includes fan tray
- Complies with IEC 60 297-3-101, -102, -103

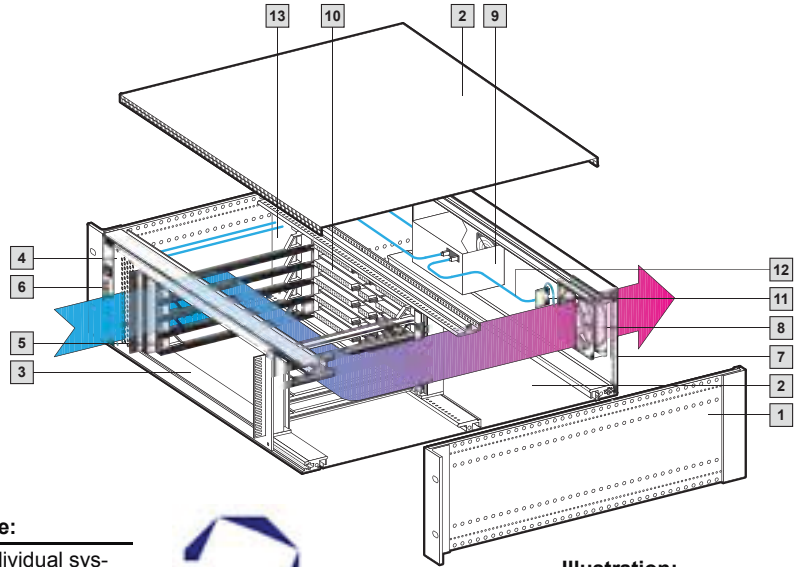
**Material:**

Sheet steel, spray-finished (black)


Slim-Box Vario cPCI		3U			4U		
For PCBs		6U x 160	6U x 160		6U x 160	6U x 160	
		With rear I/O	With rear I/O		With rear I/O	With rear I/O	
<b>Model No. RP complete system</b>		<b>9912.355</b>	<b>9912.356</b>		<b>9912.357</b>	<b>9912.358</b>	
Item	Package description			Model No. RP			Model No. RP
1	Basic enclosure, EMC, fully assembled, 300 mm deep	1	1	9912.460	1	1	9912.461
2	ATX PSU control module, 3U x 4 HP, EMC (kit)	-	1	9913.998	-	-	9913.998
3	Rear panel for AC/DC ATX PSU (300 W), rear, 3 U x 8 HP (kit)	-	1	9912.921	-	-	9912.921
4	AC Power Entry Module, 3U x 8 HP, IEC (kit)	1	-	9912.288	1	1	9912.288
5	Slim drive support (kit)	1	1	9912.462	1	1	9912.463
6	Guide supports, rear I/O	1	1	9912.471	1	1	9912.472
7	Fan tray with air filter and 12 V DC fan	1	1	9912.474	-	-	9912.475
8	Fan tray with air filter and 12 V DC alarm fan	-	-	-	1	1	9912.478
<b>Monitoring</b>							
9	EMC front panel, 3U x 4 HP with MPS controller module	-	-	-	1	-	9909.193
10	MPS display module, EMC, 3U x 4 HP	-	-	-	1	-	9912.294
11	MPS controller module and LCD display module, EMC, 6 U x 8 HP	-	-	-	-	1	9912.483
12	EMC front panel, 3U x 4 HP with MPS fan module	-	-	-	1	1	9912.293
13	EMC front panel, 3U x 4 HP with MPS temperature module	-	-	-	1	1	9909.230
14	Red temperature sensor, L = 600 mm	-	-	-	2	2	3397.538
<b>Power supplies/backplanes for plug-in power supplies</b>							
15	ATX PSU, AC/DC, wide range, 1U, 300 W	-	1	9907.584	-	-	-
16	Plug-in PSU, AC/DC, wide range, 3U, 250 W	(1)	-	3688.695	(2)	(1)	3688.695
17	PSU backplane 3U, single	1	-	9905.105	-	1	9905.105
18	PSU backplane 3U, dual	-	-	-	1	-	3688.603
19	PSU backplane 3U, triple	(1)	-	9904.131	(1)	(1)	9904.131
<b>Guide rails/filler panels/backplanes</b>							
20	Keyable guide rail, 160 mm, grey	10	10	3684.669	14	10	3684.669
21	Keyable guide rail, 160 mm, red, for system slots	2	2	3686.063	2	2	3686.063
22	Keyable guide rail, 160 mm, green, with offset, for PSU	2	-	3687.832	4	2	3687.832
23	Guide rail for rear I/O, 80 mm, grey, top	6	6	3687.936	8	6	3687.936
24	Guide rail for rear I/O, 80 mm, grey, bottom	6	6	3687.937	8	6	3687.937
25	Grounding bush + contact spring for rear I/O	12	12	3689.036	16	12	3689.036
26	ESD board contact spring	24	24	3684.978	32	24	3684.978
27	ESD contact spring for front panel	12	12	3684.979	16	12	3684.979
28	Guide rail, 4.4" for drive holder	2	2	3686.990	2	2	3686.990
29	Filler panel, EMC, 3U x 8 HP (kit)	1	-	3685.182	-	-	-
30	Filler panel, EMC, 3U x 12 HP (kit)	-	1	3685.184	-	-	-
31	Filler panel, EMC, 3U x 16 HP (kit)	1	1	3685.348	1	1	3685.348
32	Filler panel, EMC, 6U x 8 HP (kit)	-	-	-	-	1	3685.190
33	Backplane cPCI, 6U, 6 slots, system slot on right, 64 bit	1	1	3689.325	-	1	3689.325
34	Backplane cPCI, 6U, 8 slots, system slot on right, 64 bit	-	-	-	1	-	3689.327
35	Backplane 9U, Monolithic, 2 slots	(1)	-	3689.329	(1)	(1)	3689.329
36	Backplane 9U, Monolithic, 3 slots	(1)	-	3689.330	(1)	(1)	3689.330
37	Backplane 9U, Monolithic, 4 slots	(1)	-	3689.331	(1)	(1)	3689.331

(1) (2) Quantity not included with the supply!





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

 **Pixus service:**  
 Modifications or individual system solutions can be provided at short notice. Pixus' system specialists will be happy to assist you with planning and configuration.



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

U	3	4	Page
Side panel depth mm	405	405	
Wiring space (depth in mm)	210	210	
For PCB	6U x 160 mm	6U 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.		
<b>1</b> Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	-
<b>2</b> Top and bottom covers, solid	Aluminium	2	2	132
<b>13</b> Air partition	Aluminium	1	1	188
EMC shielding plate for fan	Aluminium, clear-chromated	1	1	191
<b>3</b> Horizontal mounting kit	Aluminium, clear-chromated	1	1	125
<b>4</b> Trim frame for horizontal mounting kit	2.5 mm aluminium, clear-chromated	1	1	126
<b>5</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	8	12	127
Plastic guide rails, keyable, red	Polycarbonate	2	2	127
<b>6</b> 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	-
<b>7</b> 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	-

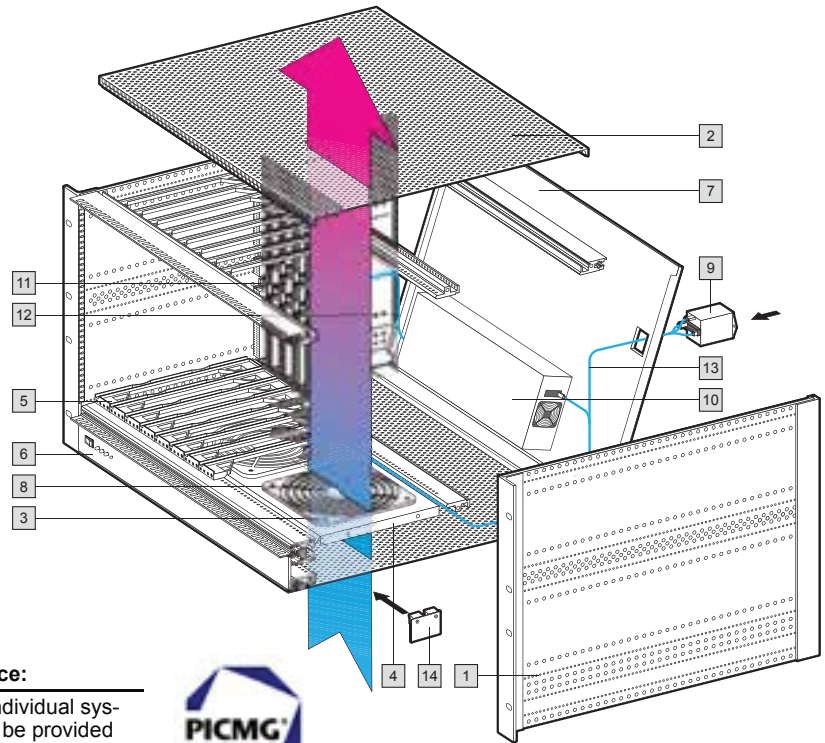
**Electrical/electronic supply includes**

Description	Technical specifications	Qty.		
<b>8</b> DC fan	12 V DC, 48 m <sup>3</sup> /h, per fan (UL, CSA, VDE) optionally speed-controlled	1	1	190
<b>9</b> Power supply unit ATX, PS/2 (RP 3687.793)	300 W	1	1	-
<b>10</b> cPCI backplane	6.5U, 5 slots	1	-	62
LED display module for MPS monitoring	for 3.3 V, +5 V, ±12 V, fan failure and temperature alarm	1	1	-
<b>11</b> Fan module	-	1	1	-
<b>12</b> DC cable harness	-	■	■	-
AC cable harness	-	■	■	-

■ Included with the supply.



## Rack-mount systems, Ripac 4U/7U, 8 slots



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

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



**Pixus service:**

Modifications or individual system solutions can be provided at short notice. Pixus' system specialists will be happy to assist you with planning and configuration.



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

**Mechanical supply includes**

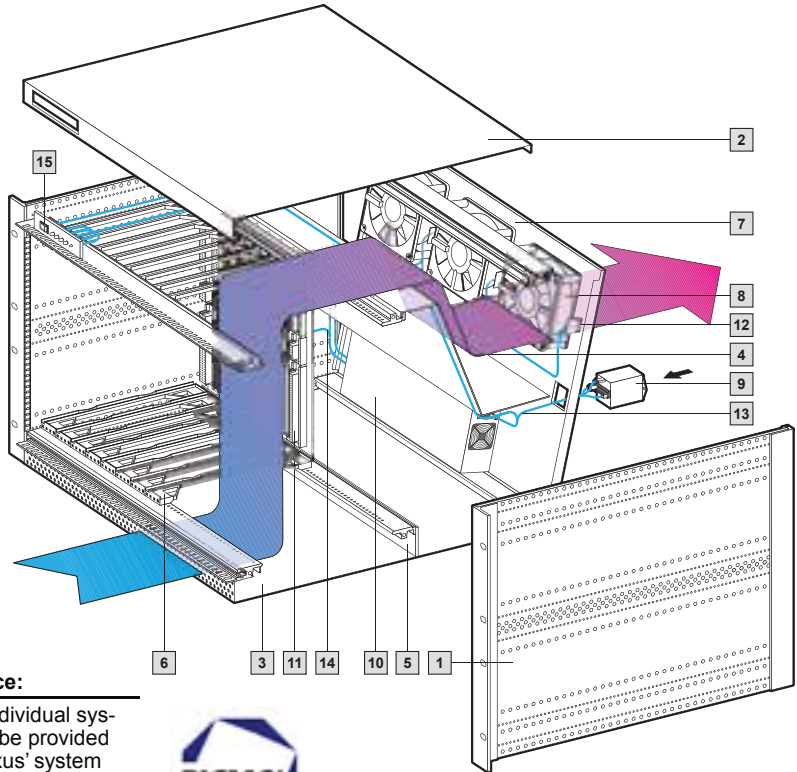
Description	Material	Qty.		
<b>1</b> Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	–
<b>2</b> Top and bottom covers, vented	Aluminium	2	2	132
<b>3</b> Finger guard	Polyamide	3	3	191
<b>4</b> Fan mounting plate	1 mm aluminium, anodised	1	1	187
<b>5</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	14	127
Plastic guide rails, keyable, red	Polycarbonate	2	2	127
<b>6</b> EMC front panel 1 U/84 HP for MPS monitoring	2.5 mm aluminium, clear-chromated	1	1	–
EMC rear panel 4 U/84 HP, horizontally hinged with connector cut-out	2.5 mm aluminium, clear-chromated	1	–	–
<b>7</b> 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			
<b>8</b> DC fan	24 V DC, 140 m <sup>3</sup> /h, per fan (VDE, UL, CSA) optionally speed-controlled	3	3	190
<b>9</b> IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	–
<b>10</b> Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, –12 V/7 A (VDE, UL, CSA)	–	1	–
Power supply unit ATX PS/2 (RP 3687.793)	300 W with switch connection cable	1	–	92
cPCI backplane	3.5U, 8 slots	1	–	62
<b>11</b> cPCI backplane	6.5U, 8 slots	–	1	62
LED display module for MPS monitoring	for 3.3 V, +5 V, ±12 V, fan failure and temperature alarm	1	1	–
<b>12</b> DC cable harness	–	■	■	–
<b>13</b> AC cable harness	–	–	■	–
<b>14</b> Fan module	–	1	1	–

■ Included with the supply.

# Rack-mount systems, Ripac 7U, 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.  
 Complies with IEC 60 297-3-101, -102, -103.  
 Fully assembled, pre-wired and tested.

**Pixus service:**

Modifications or individual system solutions can be provided at short notice. Pixus' system specialists will be happy to assist you with planning and configuration.



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

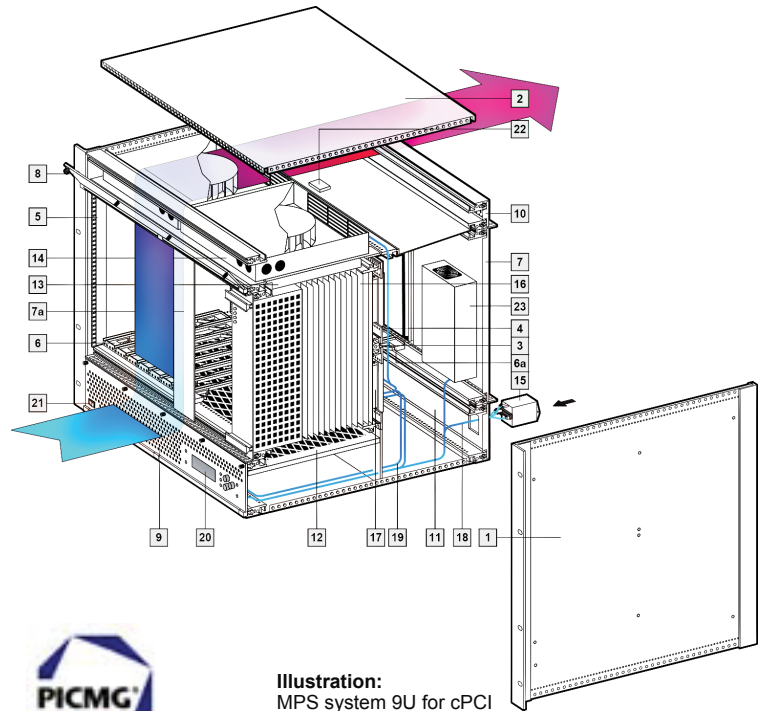
<b>U</b>	<b>7 (6 + 2 x 1/2)</b>	Page
Side panel depth mm	405	
Wiring space (depth in mm)	210	
For PCB	6 U x 160 mm	
<b>MPS system Model No. RP for cPCI</b>	<b>9910.947</b>	

Mechanical supply includes			
Description	Material	Qty.	
<b>1</b> Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	-
<b>2</b> Cover with 1/2 U edge fold and cut-outs for LED/switches	Aluminium	1	-
<b>3</b> Bottom cover with 1/2 U edge fold, ventilated at the front	Aluminium	1	136
EMC shielding plate for fan	Aluminium, clear-chromated	3	191
<b>4</b> Air baffle	Aluminium	1	188
<b>5</b> Air block panel 1/2U	Epoxy	1	188
<b>6</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	127
Plastic guide rails, keyable, red	Polycarbonate	2	127
<b>7</b> EMC rear panel, horizontally hinged, 7U, with fan and connector cut-out	2.5 mm aluminium, clear-chromated	1	189


Electrical/electronic supply includes			
Description	Technical specifications		
<b>8</b> DC fan	12 V DC, 140 m <sup>3</sup> /h, per fan (UL, CSA, VDE) optionally speed-controlled	3	190
<b>9</b> IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	-
<b>10</b> Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, -12 V/7 A (VDE, UL, CSA)	1	-
<b>11</b> cPCI backplane	6.5U, 8 slots	1	62
<b>12</b> Fan module	-	1	-
<b>13</b> AC cable harness	-	■	-
<b>14</b> DC cable harness	-	■	-
<b>15</b> LED display module for MPS monitoring	for 3.3 V, +5 V, ±12 V, fan failure	1	-
Temperature module		1	-

■ Included with the supply.

# Rack-mount systems, Ripac 9U, 8 slots, with RiCool radian 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.  
 Complies with IEC 60 297-3-101, -102, -103.  
 Fully assembled, pre-wired and tested.

 **Pixus service:**  
 Modifications or individual system solutions can be provided at short notice. Pixus' system specialists will be happy to assist you with planning and configuration.



**Illustration:**  
 MPS system 9U for cPCI

<b>U</b>	<b>9 (6 + 2 x 1 1/2)</b>	Page
Side panel depth mm	290,5	
Wiring space (depth in mm)	85,5	
For PCB	6U x 160 mm	
<b>MPS system Model No. RP for cPCI</b>	<b>9909.483</b>	

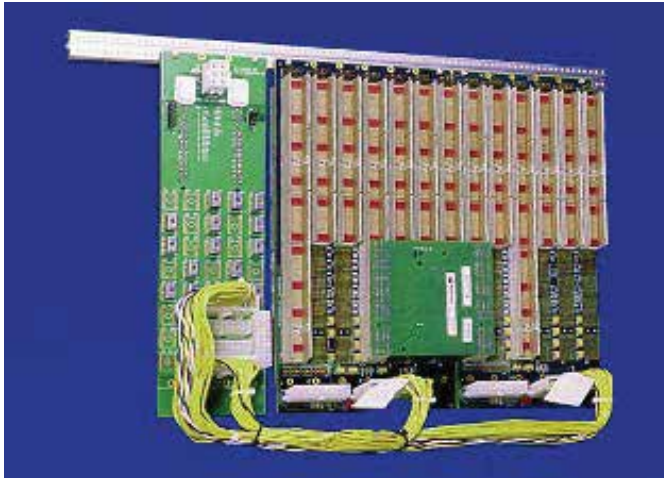
**Mechanical supply includes**

Description	Material	Qty.	
<b>1</b> Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	–
<b>2</b> Top and bottom covers, solid	Aluminium	2	132
<b>3</b> EMC rear panel 6 U/28 HP + 8 HP	2.5 mm aluminium, clear-chromated	1	–
<b>4</b> EMC front panel	2.5 mm aluminium, clear-chromated	1	151
<b>5</b> EMC contact strip	Aluminium, clear-chromated	1	123
<b>6</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	127
Plastic guide rails, keyable, red	Polycarbonate	2	127
<b>7</b> Guide rails for I/O transition modules	Polycarbonate UL 94-V0	16	128
Guide rails, keyable, green, for power supply	Polycarbonate	2	128
<b>8</b> Front panel 1 1/2 U/84 HP, horizontally hinged	2.5 mm aluminium, clear-chromated	1	–
<b>9</b> Front panel 1 1/2 U/84 HP, vented, horizontally hinged, for MPS monitoring	2.5 mm aluminium, clear-chromated	1	–
<b>10</b> EMC rear panel 1 1/2 U/84 HP, vented	2.5 mm aluminium, clear-chromated	1	–
<b>11</b> EMC rear panel 1 1/2 U/84 HP with connector cut-out	2.5 mm aluminium, clear-chromated	–	–
<b>12</b> Filter mat 84 HP, 160 mm, for slide-in attachment	–	1	–
<b>13</b> Mounting plate for RiCool	1 mm sheet steel, zinc-plated, passivated	1	–

**Electrical/electronic supply includes**

Description	Technical specifications	Qty.	
<b>14</b> RiCool DC fan, individually removable including fault alarm signal, speed control	24 V DC, 204 m <sup>3</sup> /h, 48 W	2	–
<b>15</b> IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	–
<b>16</b> Power supply, plug-in, 6U/8 HP	350 W	1	90
cPCI backplane	6.5 U, 8 slots	1	62
<b>17</b> cPCI backplane for power supply	–	1	–
<b>18</b> AC cable harness	–	■	–
<b>19</b> DC cable harness	–	■	–
<b>20</b> Display module	for 3.3 V, +5 V, ±12 V, fan failure, data input and output, voltages, temperature	1	–
<b>21</b> Mains switch	–	1	–
<b>22</b> Monitoring module for RiCool	–	1	–
<b>23</b> Power supply for RiCool	–	1	–
Temperature module	–	1	–

## Backplanes, technical specifications



Pixus offers an extensive range of powerful backplanes for cPCI.

- Modular construction facilitates expansion up to a maximum of 21 slots
- Connection between segments via cPCI and/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
- System slot on right (left upon request)

### Modular assembly

The Ripac backplanes in 32 or 64 bit versions allow the configuration of cPCI systems from 2 – 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 cPCI host CPU.

### Technical specifications

#### CPU slot

A single 3U or 6U 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

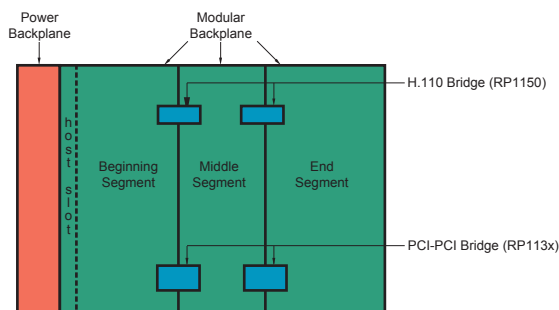
Each backplane has a control connector where +3.3, +5, ±12 V voltages may be picked off, e.g. for the connection of power LEDs.

#### 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 (cPCI spec.)
- PICMG 2.1 (hot swap spec.)
- IEEE 1101.1, mechanics
- IEEE 1101.10, mechanics
- IEEE 1101.11, mechanics



As viewed from rear of subrack



## 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>	GAO <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>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	GND
2	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
1	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

#### 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 connector 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 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>	GAO <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	BRSVP2A18	BRSVP2B18	BRSVP2C18	GND	BRSVP2E18	GND
17	GND	BRSVP2A17	GND <sup>8)</sup>	PRST#	<b>REQ6#</b>	<b>GNT6#</b>	GND
16	GND	BRSVP2A16	BRSVP2B16	DEG#	GND <sup>8)</sup>	BRSVP2E16	GND
15	GND	BRSVP2A15	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>	BRSVP2B4	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>	<b>GND</b>	<b>REQ1#</b>	–	<b>REQ2#</b>	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 Pixus 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.

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(0)	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>3)</sup>	STOP#	LOCK#	GND
15	GND	3.3 V	FRAME#	IRDY	GND <sup>3)</sup>	TRDY#	GND
12 – 14			KEY AREA				GND
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	BRSVP1A5	BRSVP1B5	RST#	GND	GNT#	GND
4	GND	BRSVP1A4	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

#### 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.

P1 connector<sup>9)</sup>

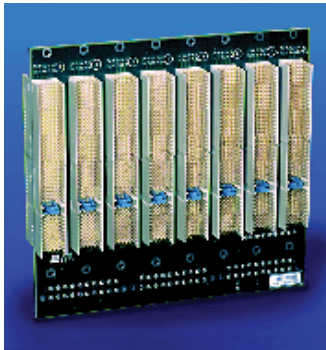
Pin	Z <sup>7)</sup>	A	B	C	D	E	F
25	GND	5 V	REQ64#	ENUM#	3.3 V	5 V	GND
24	GND	AD(1)	5 V	V(I/O) <sup>3)</sup>	AD(0)	ACK64#	GND
23	GND	3.3 V	AD(4)	AD(3)	5 V	AD(2)	GND
22	GND	AD(7)	GND	3.3 V	AD(6)	AD(5)	GND
21	GND	3.3 V	AD(9)	AD(8)	M66EN <sup>4)5)</sup>	C/BE(0)	GND
20	GND	AD(12)	GND	V(I/O) <sup>3)</sup>	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>3)</sup>	STOP#	LOCK#	GND
15	GND	3.3 V	FRAME#	IRDY#	GND <sup>3)</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) <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	BRSVA5	BRSVB5	RST#	GND	GNT#	GND
4	GND	BRSVA4	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



# Backplanes



Front view 3U



Front view 3.5U

## Backplanes 3U, 3.5U

Number of layers	8, 10 (with 3U)
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 Mbytes/ 32, 64-bit version
Power inlets	3.5U: 2 – 4 slots: 1 x ATX connector 5 – 7 slots: 2 x ATX connector 8 slots: 3 x ATX connector 3 U: via screws and busbars
Control connector	+3.3 V, +5 V, +12 V, -12 V
V I/O (3U)	May be set 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	3.5U (150.9 mm), 3U
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

**Material:**  
Fibreglass epoxy to IEC 60 249 (type FR4)

**Supply includes:**  
Backplane, fully populated.

## Backplanes 3U for low profile bridge

Slots	Version	Model No. RP	
		32 bit	64 bit
2	S	3689.300 <sup>1)</sup>	3689.307
3	SE	3689.301 <sup>1)</sup>	3689.308
4	SBME	3689.302 <sup>1)</sup>	3689.309
5	SBME	3689.303	3689.310
6	SBME	3689.304 <sup>1)</sup>	3689.311
7	SBE	3689.305 <sup>1)</sup>	3689.312
8	S	3689.306 <sup>1)</sup>	3689.313

<sup>1)</sup> Delivery times available on request.

## Backplanes 3.5U

Slots	Version	Model No. RP	
		32 bit	64 bit
2	SBE	–	3687.864
3	SE	3687.865	3686.578
4	SE	3687.863	3686.576
5	SE	3687.862	3686.575
6	SBME	3687.861	3686.548
7	SBE	3687.860	3686.547
8	S	3687.859	3686.546

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

## + Accessories:

cPCI/cPCI bridge, RP 3686.571  
(for 3.5U backplanes) - See Page 65  
cPCI/cPCI low profile bridge  
(for 3U backplanes) - See Page 65  
Accessories for backplane mounting:  
Conductive strips - See Page 121  
Insulating strips - See Page 122



Front view 6U



Front view 6.5U

## Backplanes 6U, 6.5U

Number of layers	8, 10 (with 6U)
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 Mbytes/ 32, 64-bit version
Power inlets	6.5U: 2 – 4 slots: 1 x ATX connector 5 – 7 slots: 2 x ATX connector 8 slots: 3 x ATX connector 6 U: via screws and busbars
Control connector	+3.3 V, +5 V, +12 V, -12 V
V I/O (6U)	May be set 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	6.5U (284.3 mm), 6U
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

**Material:**  
Fibreglass epoxy to IEC 60 249 (type FR4)

**Supply includes:**  
Backplane, fully populated.

## Backplanes 6U for low profile bridge

Slots	Version	Model No. RP	
		32 bit	64 bit
2	S	3689.314 <sup>1)</sup>	3689.321
3	SE	3689.315 <sup>1)</sup>	3689.322
4	SBME	3689.316 <sup>1)</sup>	3689.323
5	SBME	3689.317 <sup>1)</sup>	3689.324
6	SBME	3689.318 <sup>1)</sup>	3689.325
7	SBE	3689.319 <sup>1)</sup>	3689.326
8	S	3689.320 <sup>1)</sup>	3689.327

<sup>1)</sup> Delivery times available on request.

## Backplanes 6.5U for low profile bridge

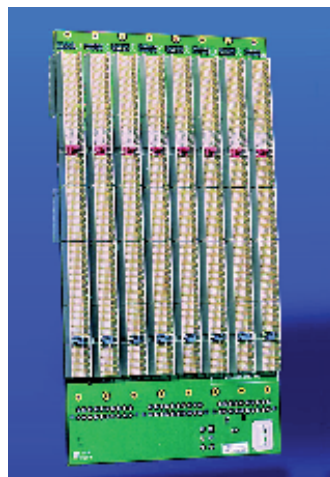
Slots	Version	Model No. RP
		64 bit
3	SE	3689.209
4	SE	3689.208
5	SBE	3689.207
6	SBME	3689.206
7	SBE	3689.205

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

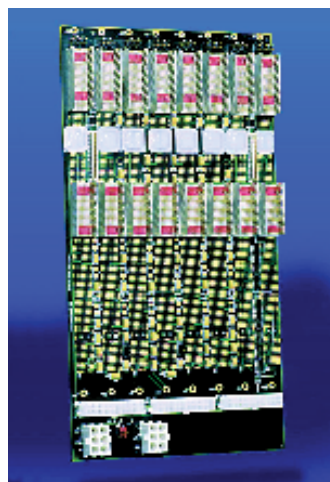
## + Accessories:

cPCI/cPCI low profile bridge - See Page 65  
Accessories for backplane mounting:  
Conductive strips - See Page 121  
Insulating strips - See Page 122  
Stiffening kit: **RP 3688.088.**

## Backplanes



Front view



Rear view

### Backplanes 7U with H.110

Number of layers	10
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 MBytes/32, 64-bit (for cPCI)
Power inlets	up to 4 slots 1 x ATX connector 5 – 7 slots: 2 x ATX connector 8 slots: 3 x ATX connector
CPU slot	Right
Standards	PCI 2.1 (PCI specification) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) PICMG 2.5 (cPCI Computer Telephony) IEEE 1101.1/10/11
Installation height	7U
Distance between slots	4 HP
Connectors	J1, J2 64 bit J3 rear I/O J4 H.110
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	Yes

#### Material:

Fibreglass epoxy to IEC 60 249 (type FR4)

#### Supply includes:

Backplane, fully populated.

#### H.110 connected to system slot

Slots	cPCI version	H.110 version	Model No. RP
3	SE	SE	<b>3688.508</b>
4	SE	SBME	<b>3688.507</b>
5	SE	SBME	<b>3687.875</b>
6	SBME	SBME	<b>3687.874</b>
7	SBE	SBME	<b>3687.873</b>
8	S	SBME	<b>3687.877</b>

#### H.110 not connected to system slot

Slots	cPCI version	H.110 version	Model No. RP
3	S	S	<b>3688.427</b>
4	S	SB	<b>3688.426</b>
5	S	SB	<b>3688.506</b>
6	SB	SB	<b>3688.505</b>
7	SBE	SB	<b>3688.504</b>
8	S	SB	<b>9805.494</b>

Extendible with low profile bridge.

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

#### J4 pin assignment

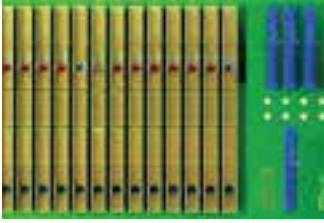
No.	Row Z	Row A	Row B	Row C	Row D	Row E	Row F
25	NP	SGA4	SGA3	SGA2	SGA1	SGA0	FG
24	NP	GA4	GA3	GA2	GA1	GA0	FG
23	NP	+12 V	/CT reset	/CT EN	-12 V	CT_MC	FG
22	NP	PFSO#	RSVD	RSVD	RSDV	RSDV	FG
21	NP	-SEL Vbat	PFS1#	RSDV	RSDV	SEL VbatRtn	FG
20	NP	NP	NP	NP	NP	NP	NP
19	NP	NP	NP	NP	NP	NP	NP
18	NP	VRG	IN/C	IN/C	IN/C	VRGRtn	NP
17	NP	NP	NP	NP	NP	NP	NP
16	NP	NP	NP	NP	NP	NP	NP
15	NP	-Vbat	IN/C	IN/C	IN/C	Vbat Rtn	NP
14	KEY AREA						
13							
12							
11	NP	CT_D29	CT_D30	CT_D31	V(I/O)	/CT_FRAME	GND
10	NP	CT_D27	+3.3 V	CT_D28	+5 V	/C_FRAME B	GND
9	NP	CT_D24	CT_D25	CT_D26	GND	/FR_COMP	GND
8	NP	CT_D21	CT_D22	CT_D23	+5 V	CT_C8 A	GND
7	NP	CT_D19	+5 V	CT_D20	GND	CT_C8 B	GND
6	NP	CT_D16	CT_D17	CT_D18	GND	CT_NETREF	GND
5	NP	CT_D13	CT_D14	CT_D15	+3.3 V	CT_NETREF	GND
4	NP	CT_D11	+5 V	CT_D12	+3.3 V	SCLK	GND
3	NP	CT_D8	CT_D9	CT_D10	GND	SCLK-D	GND
2	NP	CT_D4	CT_D5	CT_D6	CT_D7	GND	GND
1	NP	CT_D0	+3.3 V	CT_D1	CT_D2	CT_D3	GND

#### Key to J4 pin assignment

CT_name	= H.110 TDM bus signals
+5 V	= +5 V power
+3.3 V	= +3.3 V power
GND	= logic ground
V(I/O)	= I/O cell power
FG	= frame ground
RSVD	= reserved for future use
NP	= a pin and pad REQUIRED to be not populated to meet safety regulations
IN/C	= no connect required for safety agency insulation requirements

-SELVbat	= short loop battery
SELVbatRtn	= short loop battery return
-Vbat	= telecom power distribution bus
VbatRtn	= return bus pin for -Vbat
SGA0-SGA4	= shelf enumeration bus signals
GA0-GA4	= slot ID signals: not bussed
VRG	= bus for ringing voltage
VRGRtn	= bus for ringing voltage
PFSO#-PFS1#	= busses for power fail sense
KEY AREA	= area utilized for key

# Backplanes



## Backplanes 7U, Switch Fabric to PICMG 2.16

The "Switch Fabric" backplanes comply with PICMG specification 2.16. They support telephony applications and a high level of system availability in which cPCI is combined with Ethernet for high-speed applications.

Power inlets	Positronic 47-pole, or ATX
CPU slot	Right
Standards	PCI 2.1 (PCI specification) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) PICMG 2.5 (cPCI Computer Telephony) IEEE 1101.1/10/11 PICMG 2.16
Installation height	7U (6U for RP 3686.396 and RP 3689.186)
Distance between slots	4 HP
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	Yes

**Material:**  
Fibreglass epoxy to IEC 60 249 (type FR4)

**Supply includes:**  
Backplane, fully populated.

### Technical specifications:

- 7U, 84 HP/32 HP
- Comply with PICMG 2.1, fully hot swap-compatible
- Selectable voltage V (I/O) (3.3 V or 5 V) where configured for 33 MHz CompactPCI
- Integral Schottky diode bus terminator
- Prepared for up to four backplane reinforcements to avoid bending during card insertion
- H.110 CT bus complies with specification PICMG 2.5 at all node slots
- Support 8 HP CPU boards when one node slot is relinquished
- Twin redundant support for Switch Fabric (2 fabric and 12 basic nodes), as specified in PICMG 2.16
- Support rear transition modules with all board slots
- Configurable for power supply with either two 6U x 8 HP, three 6U x 4 HP, three 3U x 4 HP, three 3U x 8 HP or four 3U x 4 HP
- All power supply slots conform to PICMG 2.11
- Power supply connectors for H.110-Vbat, -SELVbat and VRG power signals
- ATX power connector for auxiliary power inlet/outlet
- Two fan power connectors for 12 V and system management support
- System control bus (SMBus) complies with PICMG 2.9 and supports all boards, power supplies, power entry modules, fans and alarm cards
- Support of I<sup>2</sup>C bridge function on the alarm card for >19 SMBus nodes

Width	Number of slots	Description of slots	Model No. RP
32 HP	8	1 Fabric slot 6 node slots with cPCI and H.110 1 host slot	<b>3689.188</b>
		see RP 3689.188, but without H.110	<b>3686.414</b>
64 HP	16	1 Fabric slot 6 node slots with cPCI and H.110 1 host slot 1 Fabric slot 6 node slots with cPCI and H.110 1 host slot 3 slots for power supplies	<b>3686.396</b>
		see RP 3686.396, but without H.110	<b>3689.186</b>
84 HP	21	7 node slots with cPCI and H.110 1 host slot 1 node slot with H.110 without cPCI 1 Fabric slot 7 node slots with cPCI and H.110 1 host slot 1 node slot with H.110 without cPCI 1 Fabric slot 1 Alarm slot	<b>3686.397</b>
		see RP 3686.397, but without H.110	<b>3689.190</b>
		see RP 3686.397, but without cPCI	<b>3689.191</b>

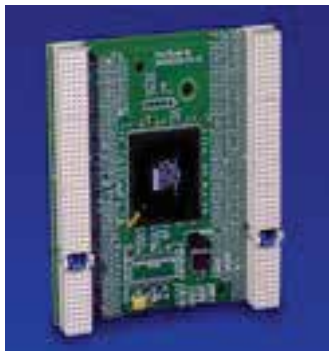
### Front

1	System (CPU) card	12	Node card
2	Node card	13	Node card
3	Node card	14	Node card
4	Node card	15	Node card
5	Node card	16	Fabric card B
6	Node card	17	Blank
7	Node card	18	Power supply 1
8	Fabric card A	19	Power supply 2
9	System (CPU) card	20	Power supply 3
10	Node card	21	Blank
11	Node card		

### Rear

1	System RTC	12	Node RTC
2	Node RTC	13	Node RTC
3	Node RTC	14	Node RTC
4	Node RTC	15	Node RTC
5	Node RTC	16	Fabric B RTC
6	Node RTC	17	Alarm card
7	Node RTC	18	PEM 1
8	Fabric A RTC	19	
9	System RTC	20	PEM 2
10	Node RTC	21	
11	Node RTC		

## Backplanes



1



2

### Modular cPCI bridge

cPCI bridge may be connected to the rear to extend the bus by a maximum of 7 additional slots. The cPCI bridge handles all communications between the individual bus segments. The front slots are freely available for cPCI boards. It supports the 64-bit PCI bus and may be used in conjunction with cPCI backplanes 3.5 U and 6.5U.

#### Technical specifications:

- May be connected to the rear of cPCI backplanes
- PCI bridge
- 64 bit "high performance" Intel 21 154
- For use with Pixus cPCI backplanes (not with low profile backplanes)
- Corresponding to PCI specifications 2.1
- Conforms to cPCI
- cPCI bridge connects cPCI backplanes from right to left (as viewed from the front) – i.e. the "left-hand" connector accommodates the host board

#### Material:

Fibreglass epoxy to IEC 60 249 (FR4)

#### Supply includes:

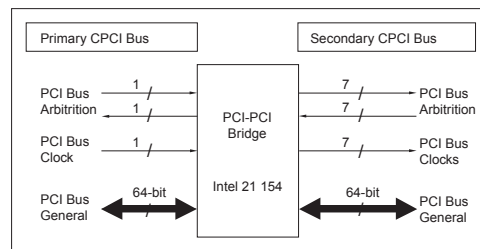
Bridge, fully populated.

1 Front view

2 Rear view

Description	Model No. RP
64-bit cPCI bridge	3686.571

Extended delivery times.



1



2

### Modular low profile bridge

cPCI bridge may be connected to the rear to extend the bus by a maximum of 7 additional slots, without any loss of slots: Optionally available as a 32-bit or 64-bit version. Only suitable for use in conjunction with low profile backplanes.

#### Material:

Fibreglass epoxy to IEC 60 249 (FR4)

#### Supply includes:

Bridge, fully populated.

1 32-bit version

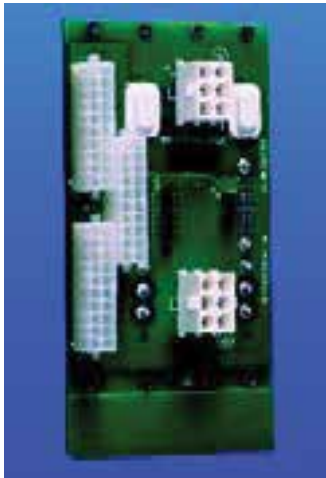
2 64-bit version

Version	Bit	Model No. RP
left-right	32	3689.210
right-left	32	3689.211
left-right	64	9810.637
right-left	64	9812.625
right-left	64	3687.880 <sup>1)</sup>

<sup>1)</sup> For backplane H.110



# Backplanes



## Power supply board 3U/3.5U

- Board 3U/3.5U (0.5U may be broken off), 8HP, 16H, 24HP
- For use in conjunction with cPCI backplanes  
Accommodation of 1/2/3 power supplies with up to 250 W
- AC/DC connection is made via two 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 with 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)

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

### Material:

Fibreglass epoxy to IEC 60 249 (FR4)

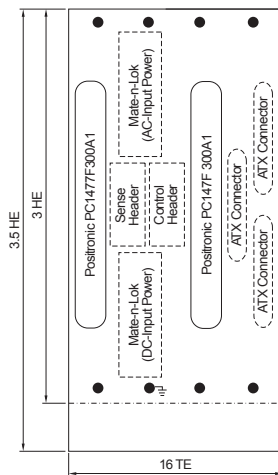
### Supply includes:

Board, fully populated.

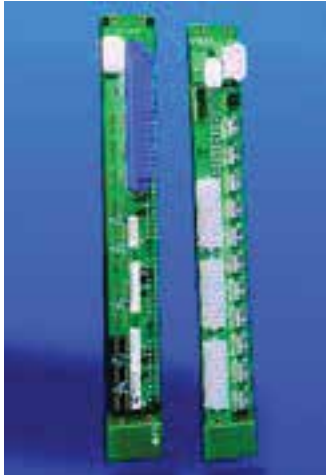
### Note:

Plug-in power supplies  
See Page 128.

RP 3688.603



# Backplanes



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

- Board 6U/6.5U (0.5U may be broken off), 8 HP
- For use in conjunction with cPCI backplanes 3.5U, 6.5U, H.110
- Accommodation of a power supply of 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 6U cPCI power supply with 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

Description	Model No. RP
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>

Extended delivery times.

### Material:

Fibreglass epoxy to IEC 60 249 (FR4)

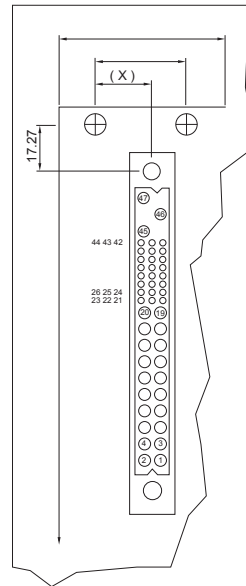
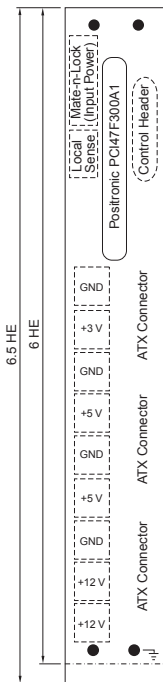
### Supply includes:

Board, fully populated.

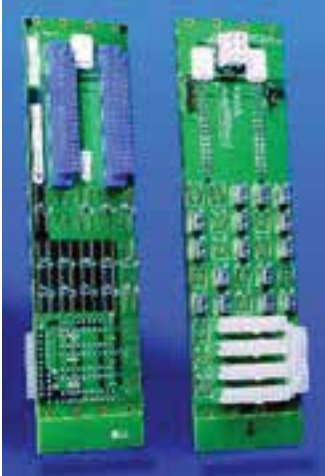
### Note:

Plug-in power supplies

RP 3688.607



# Power supply boards



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

- Board 6U/6.5U (0.5U may be broken off), 16HP
- For use in conjunction with Pixus cPCI backplanes
- 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 6U 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

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>

Extended delivery times.

### Material:

Fibreglass epoxy to IEC 60 249 (FR4)

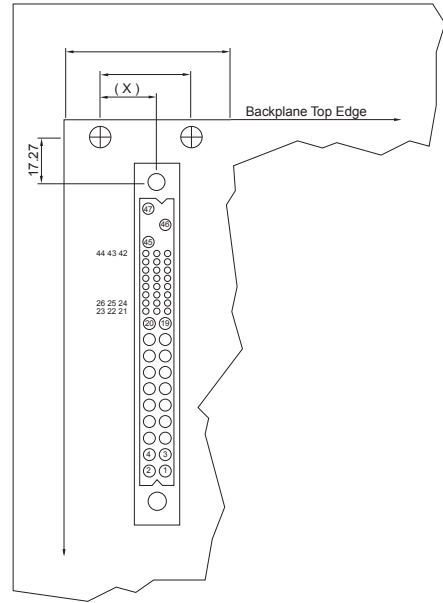
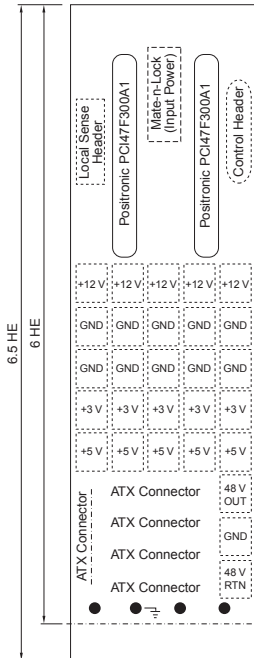
### Supply includes:

Board, fully populated.

### Note:

Plug-in power supplies

RP 3688.608



## Backplanes, horizontal



### Backplane 9U Monolithic with power supply connector

**Material:**

Fibreglass epoxy to IEC 60 249 (FR4)

**Supply includes:**

Board, fully populated.

Slots	Connector Positronic 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>

System slot on right 64 bit with rear I/O, V I/O: +5.0 V.  
H.110 not connected to system slot.

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



## Overview

### Slim-Box Vario VME64x systems



1, 2, 3, 4U/2, 4, 6, 8 slots  
See page 72

#### Applications

Configuration of 482.6 mm (19") industrial computer systems to the cPCI specification for

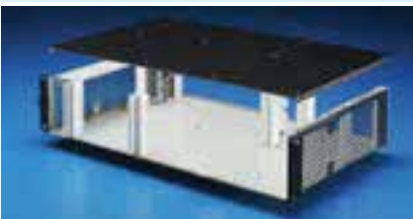
- Telecommunications
- Automation

#### Design features

- 482.6 mm (19") rack-mounted system for horizontal installation of boards at the front and I/O boards at the rear
- 1U, 2U, 3U, 4U, 300 mm deep
- Standard cooling from left to right
- Sheet steel, spray-finished (black)
- Preconfigured systems including backplane and fan unit
- Fully assembled, wired and tested
- Installation of cPCI boards to cPCI spec. 2.0 Rev. 3.0

#### User benefits

- Horizontal installation of Euroboards/ double Euroboards
- Maximum installation with minimal space requirements
- 2/4/6/8 slots at the front for 160 mm boards and at the rear for 80 mm boards
- Hot swap-compatible power supplies AC or DC optional
- EMC and ESD protection
- Fully assembled, pre-wired and tested
- Integral cooling from left to right
- Modular assembly supports individual configurations
- Complies with cPCI spec. 2.0 Rev. 3.0, IEC 60 297-3-101, -102, -103



#### Individually configurable

Looking for an individual enclosure solution? Talk to us. We will select a suitable basic enclosure and populate it with your required components.

### Ripac VME/VME64x systems



3U, 5 slots/4U, 7 slots horizontal  
See page 73

#### Applications

Configuration of 482.6 mm (19") industrial computer systems to the cPCI specification for

- Telecommunications
- Automation

#### Design features

- 482.6 mm (19") rack-mounted system for horizontal installation of double Euroboards
- 3 or 4U, 405 mm deep
- Clear-chromated aluminium
- Including backplane, power supply and fan in the rear panel
- Fully assembled, wired and tested
- Horizontal installation space for double Euroboards: 5 or 7 slots
- Installation of cPCI boards to cPCI spec. 2.0 Rev. 3.0

#### User benefits

- Horizontal installation of double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing from front to rear with fans in the rear panel
- Keyable guide rails
- Complies with cPCI spec. 2.0 Rev. 3.0, IEC 60 297-3-101, -102, -103



### Ripac VME/VME64x systems



4U/7U, 8 slots  
See page 74

#### Applications

Configuration of 482.6 mm (19") industrial computer systems to the cPCI specification for

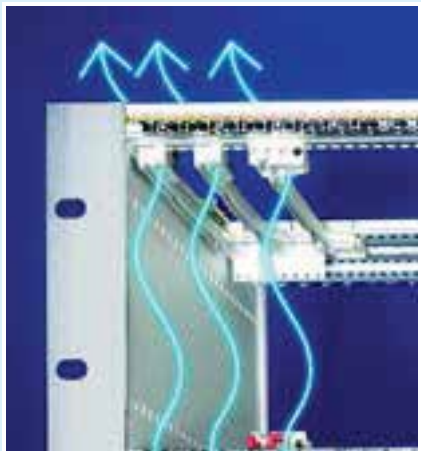
- Telecommunications
- Automation

#### Design features

- 482.6 mm (19") rack-mounted system for vertical installation of Euroboards/ double Euroboards
- 4 or 7U, 405 mm deep
- Clear-chromated aluminium
- Including backplane and power supply unit
- Fan module with 3 DC fans
- Fully assembled, wired and tested
- Installation space for Euroboards and double Euroboards: 8 slots
- Installation of cPCI boards to cPCI spec. 2.0 Rev. 3.0

#### User benefits

- Vertical installation of Euroboards/ double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Fan module ensures targeted air routing from bottom to top
- Keyable guide rails
- Complies with cPCI spec. 2.0 Rev. 3.0, IEC 60 297-3-101, -102, -103



### Ripac VME/VME64x systems



7U, 12 slots  
See Page 75

#### Applications

Configuration of 482.6 mm (19") computer systems to VME specifications for

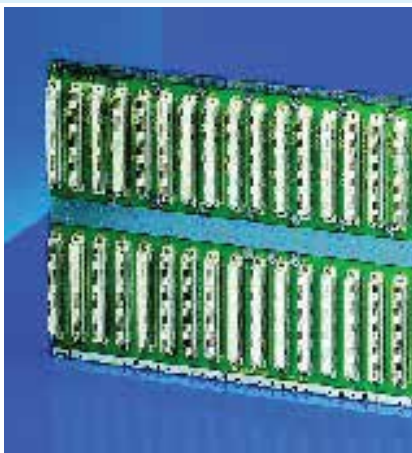
- Process control
- Traffic guidance systems
- Image processing
- Automation

#### Design features

- 482.6 mm (19") rack-mounted system for vertical installation of double Euroboards
- 7U, 405 mm deep
- Clear-chromated aluminium
- Including backplane, power supply and fan in the rear panel
- Fully assembled, wired and tested
- Installation space for Euroboards and double Euroboards: 12 slots
- Installation of VME or VME64x boards to VME specifications

#### User benefits

- Vertical installation of double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing from front to rear
- Keyable guide rails
- Complies with IEC 60 297-3-101, -102, -103



### Ripac VME/VME64x systems



9U, 12 slots with RiCool and rear I/O  
See Page 76

#### Applications

Configuration of 482.6 mm (19") computer systems to VME specifications for

- Process control
- Traffic guidance systems
- Image processing
- Automation

#### Design features

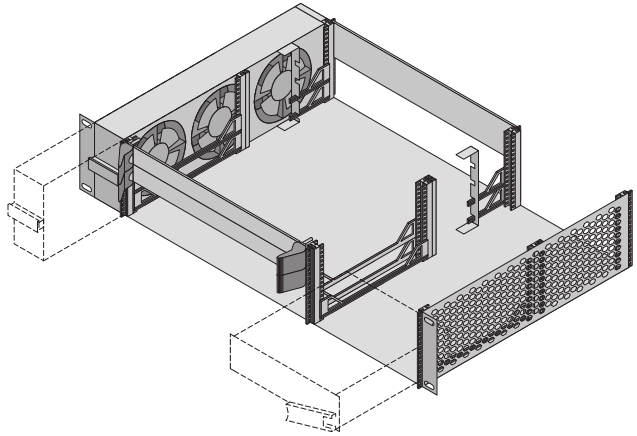
- 482.6 mm (19") rack-mounted system for vertical installation of double Euroboards
- 9U, 290.5 mm deep, fitted at the rear for I/O modules
- Clear-chromated aluminium
- Including backplane, power supply and two RiCool radial fans (204 m<sup>3</sup>/h)
- Fully assembled, wired and tested
- Installation space for Euroboards and double Euroboards: 12 slots
- Installation of VME or VME64x boards to VME specifications

#### User benefits

- Vertical installation of double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing from front to rear
- I/O transition modules at the rear
- Keyable guide rails
- Effective ventilation with two RiCool blowers (204 m<sup>3</sup>/h)
- Complies with IEC 60 297-3-101, -102, -103



## Rack-mount systems, Slim-Box Vario 2U, 4U



**Technical specifications:**

- Rack-mount enclosure 482.6 mm (19") for the horizontal installation of boards
- Front and rear 2 slots per U for VME64x boards
- Enclosure cooling from left to right
- EMC and ESD-compatible design
- Includes fan tray
- Complies with IEC 60 297-3-101, -102, -103

**Material:**

Sheet steel, spray-finished (black)

**Note:**

In addition to the pre-configured systems shown here, individual solutions are also easily achieved. The basic enclosure provides the basis, and is variably populated with the required components.

Slim-Box Vario VME64x		2U		4U	
For PCBs		6U x 160		3U x 160	
Model No. RP complete system		VME64x without rear I/O 9912.354		VME64x without rear I/O 9912.484	
Item	Package description	Model No. RP		Model No. RP	
1	Basic enclosure, EMC, fully assembled, 300 mm deep, black	1	9912.048	1	9912.461
2	ATX PSU control module, 3U x 4 HP, EMC (kit)	1	9913.998	1	9913.998
3	Rear panel for AC/DC ATX PSU (200/300 W), 3 U x 8 HP (kit)	1	9912.050	1	9912.921
4	Slim drive support (kit)	1	9912.289	–	9912.463
5	Rails for standard 3U components (kit)	–	9912.056	1	9912.466
6	Fan tray with fan filter and 12V DC fan, fully wired	1	9909.191	1	9912.475
<b>Power supplies</b>					
7	ATX PSU, AC/DC, wide range, 1U, 200 W	1	9907.585	–	–
8	ATX PSU, AC/DC, wide range, 1U, 300 W	–	–	1	9907.584
<b>Guide rails</b>					
9	Keyable guide rails, 160 mm, grey	8	3684.669	16	3684.669
10	ESD board contact spring	8	3684.978	32	3684.978
11	ESD contact spring for front panel	4	3684.979	16	3684.979
12	Guide rails 4.4" for drive support	2	3686.990	–	–
<b>Filler panels</b>					
13	Filler panel, EMC, 3U x 4 HP (kit)	–	–	1	3685.178
14	Filler panel, EMC, 3U x 8 HP (kit)	1	3685.182	1	3685.182
15	Filler panel, EMC, 3U x 16 HP (kit)	–	–	2	3685.348
16	Filler panel, EMC, 6U x 16 HP (kit)	1	3685.349	–	–
17	Filler panel, EMC, 6U x 28 HP (kit)	–	–	1	3684.260
<b>Backplanes</b>					
18	VME64x backplane, with P0, 6U, 4 Slot, active/passive	1	9912.362	–	–
19	VME64x backplane, with P0, 6U, 8 Slot, active/passive	–	–	1	9912.413



## Rack-mount systems, Ripac 3U, 5 lots/4U, 7 slots horizontal

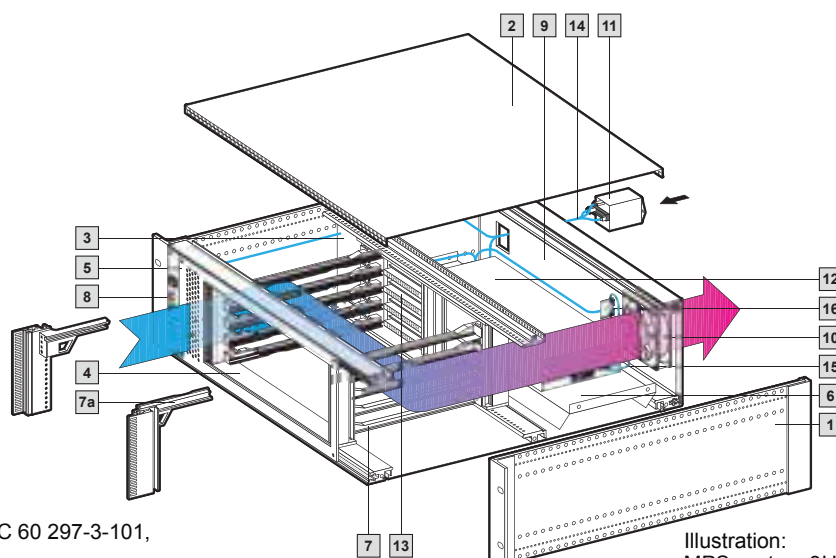


Illustration: MPS system 3U

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,

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

**Pixus service:**

Modifications or individual system solutions can be provided at short notice.

Pixus' system specialists will assist you with planning and configuration.

U	3	3	4	4	Page
Side panel depth mm	405	405	405	405	
Wiring space (depth in mm)	210	210	210	210	
For PCBs	6U x 160 mm	6U x 160 mm	6U x 160 mm	6U 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**

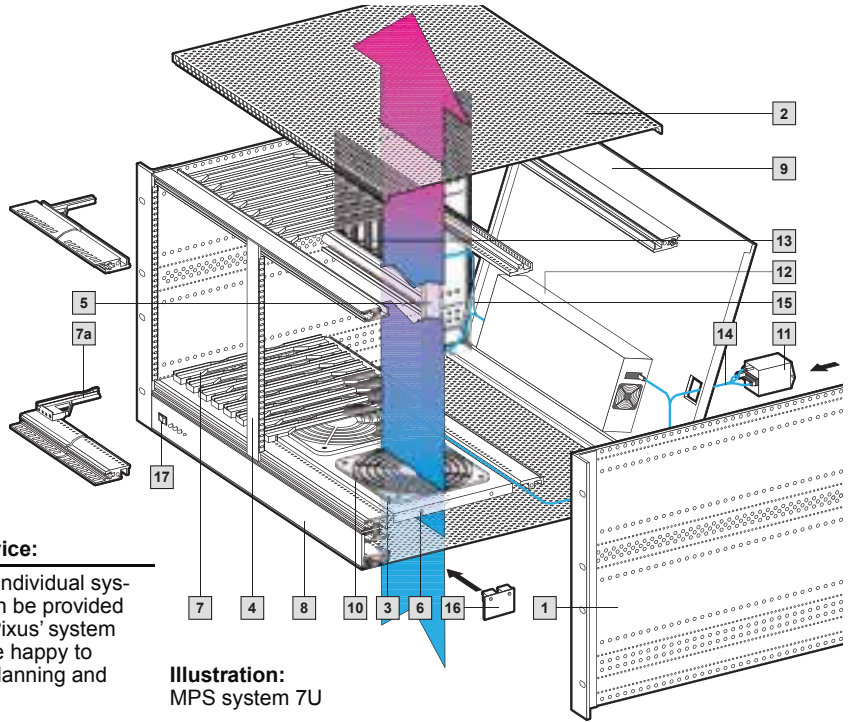
Description	Material	Qty.				
<b>1</b> Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/ stainless steel	1	1	1	1	–
<b>2</b> Top and bottom covers, solid	Aluminium	2	2	2	2	132
<b>3</b> Air partition	Aluminium	1	1	1	1	188
<b>4</b> Horizontal mounting kit	Aluminium, clear-chromate	1	1	1	1	125
<b>5</b> Trim frame for horizontal mounting kit	2.5 mm aluminium, clear-chromated	1	1	1	1	126
<b>6</b> Mounting base for power supply unit	2 mm aluminium, anodised	1	1	1	1	–
EMC shielding plate for fan	Aluminium, clear-chromated	1	1	1	1	191
<b>7</b> Guide rails	Polycarbonate UL 94-V0	10	–	14	–	127
<b>7a</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	10	–	14	127
<b>8</b> EMC front panel 3U or 4 U/5 HP, with MPS monitoring	2.5 mm aluminium, clear-chromated	1	1	1	1	–
<b>9</b> EMC rear panel 3U/84 HP with fan and connector cut-out	2.5 mm aluminium, clear-chromated	1	1	–	–	–
EMC rear panel 4U/84 HP 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, 48 m <sup>3</sup> /h per fan (UL, CSA, VDE) optionally speed-controlled	1	1	1	1	190
<b>11</b> IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	1	1	–
<b>12</b> Switch mode power supply unit	250 W, 5 V/35 A, +12 V/8 A, –12 V/8 A (VDE, UL, CSA)	1	1	1	1	–
<b>13</b> VME backplane	J1, 5 slots, IN-board, passive, ADC	1	–	–	–	81
VME64x backplane	J1/J2, 5 slots (without P0)	–	1	–	–	79
VME backplane	J1, 7 slots, IN-board, passive, ADC	–	–	1	–	81
VME64x backplane	J1/J2, 7 slots	–	–	–	1	79
LED display module for MPS monitoring	for +5 V, ±12 V, fan failure	1	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	1	–



## Rack-mount systems, Ripac 4U/7U, 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 page 102 – 104). Complies with IEC 60 297-3-101, -102, -103. Fully assembled, pre-wired and tested.

**Pixus service:**  
 Modifications or individual system solutions can be provided at short notice. Pixus' system specialists will be happy to assist you with planning and configuration.

**Illustration:**  
 MPS system 7U

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 PCBs	3U x 160 mm	3U/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>	

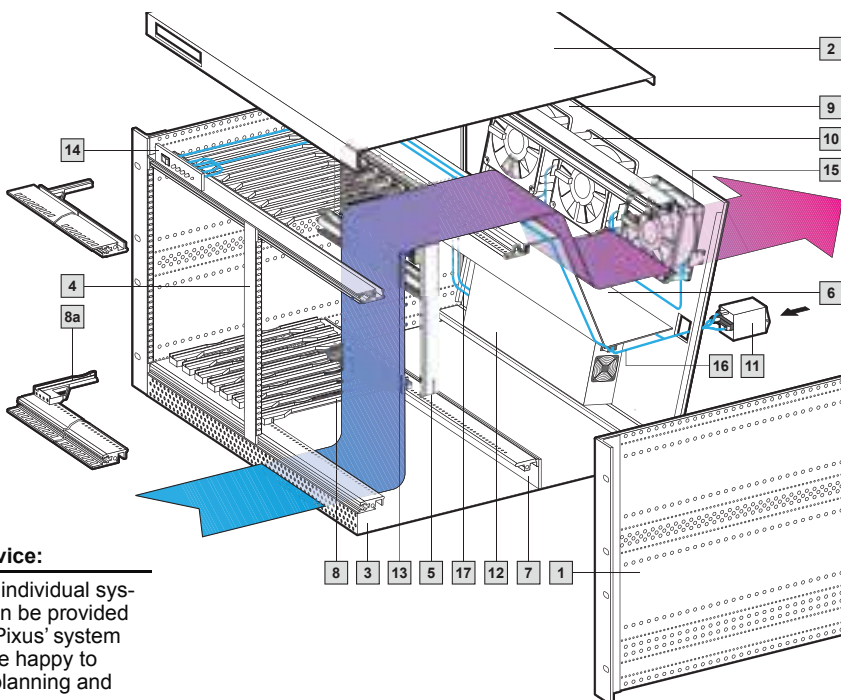
**Mechanical supply includes**

Description	Material	Qty.			
<b>1</b> Ripac 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	132
<b>3</b> Finger guard	Polyamide	3	3	3	191
<b>4</b> EMC front panel, 6U/4 HP (with 7U)	Aluminium, clear-chromated	–	1	–	–
<b>5</b> Support, vertical (with 7U)	Aluminium, clear-chromated	–	1	–	125
<b>6</b> Fan mounting plate	1 mm aluminium, anodised	1	1	1	187
<b>7</b> Guide rails	Polycarbonate UL 94-V0	24	24	–	127
<b>7a</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	–	24	127
<b>8</b> EMC front panel 1U/84 HP for switches/LED	2.5 mm aluminium, clear-chromated	1	1	1	–
Rear panel 4U/84 HP, horizontally hinged with connector cut-out	2.5 mm aluminium, clear-chromated	1	–	–	–
<b>9</b> EMC rear panel 7U/84 HP, horizontally hinged with connector cut-out	2.5 mm aluminium, clear-chromated	–	1	1	–


**Electrical/electronic supply includes**

Description	Technical specifications	Qty.			
<b>10</b> DC fan	12 V DC, 140 m³/h per fan (VDE, UL, CSA) optionally speed-controlled	3	3	3	190
<b>11</b> IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	1	–
<b>12</b> Switch mode power supply unit	400 W, 5 V/80 A, +12 V/8 A, –12 V/8 A (VDE, UL, CSA)	1	1	–	–
Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, +5 V/25 A, +12 V/8 A, –12 V/7 A (VDE, UL, CSA)	–	–	1	–
<b>13</b> VME backplane	J1, 12 slots, IN-board, passive, ADC	1	1	–	81
VME64x backplane	J1/J2, 12 slots	–	–	1	79
<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	–

## Rack-mount systems, Ripac 7U, 12 slots



**Technical specifications:**  
 Subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases.  
 Prepared to accommodate VME-bus boards and drives.  
 Includes MPS Monitoring (see page 102 – 104).  
 Complies with IEC 60 297-3-101, -102, -103.  
 Fully assembled, pre-wired and tested.

 **Pixus service:**  
 Modifications or individual system solutions can be provided at short notice. Pixus' system specialists will be happy to assist you with planning and configuration.

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 PCBs	6U x 160 mm	6U 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> Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/ stainless steel	1	1	–
<b>2</b> Cover with 1/2 U edge fold and cut-outs for switches/LEDs	Aluminium	1	1	–
<b>3</b> Bottom cover with 1/2U edge fold, ventilated at the front	Aluminium	1	1	136
<b>4</b> EMC front panel, 6U/4 HP	2.5 mm aluminium, clear-chromated	1	–	–
EMC shielding plate for fan	Aluminium, clear-chromated	3	3	191
<b>5</b> Vertical support	Aluminium, clear-chromated	1	–	125
<b>6</b> Air baffle	1 mm aluminium, anodised	1	1	188
<b>7</b> Air block panel, 1/2U	Epoxy	1	1	188
<b>8</b> Guide rails	Polycarbonate UL 94-V0	24	–	127
<b>8a</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	24	127
<b>9</b> EMC rear panel, horizontally hinged, 7U, 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	190
<b>11</b> IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	–
<b>12</b> Switch mode power supply unit	400 W, 5 V/80 A, +12 V/8 A, –12 V/8 A (VDE, UL, CSA)	1	–	–
Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, –12 V/7 A (VDE, UL, CSA)	–	1	–
<b>13</b> VME backplane	J1, 12 slots, IN-board passive, ADC	1	–	81
VME64x backplane	J1/J2, 12 slots (without P0)	–	1	79
<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	–	■	■	–

## Rack-mount systems, Ripac 9U, 12 slots, with RiCool radial fan



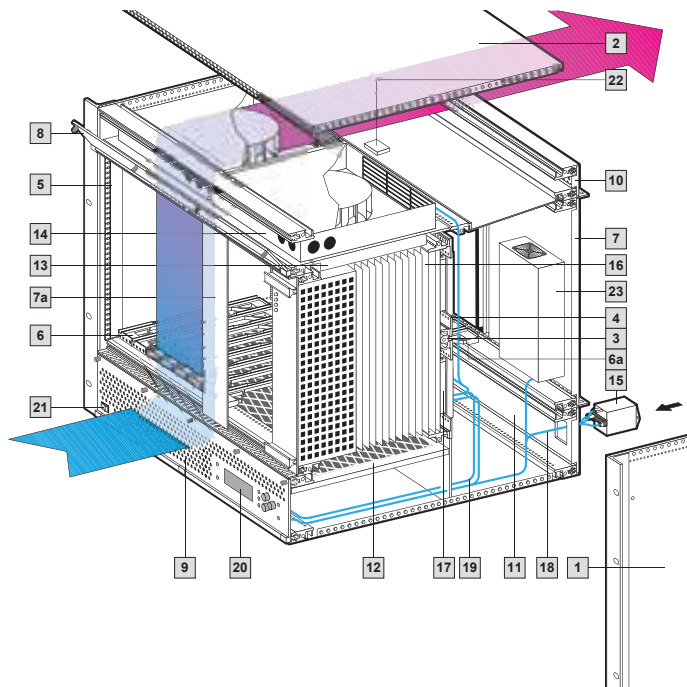
**Technical specifications:**  
 Subrack, 290,5 mm deep, for installation in 482.6 mm (19") enclosures or cases.  
 Prepared to accommodate VMEbus boards and drives.  
 Includes MPS Monitoring  
 Complies with IEC 60 297-3-101, -102, -103.

Fully assembled, pre-wired and tested.



**Pixus service:**

Modifications or individual system solutions can be provided at short notice. Pixus' system specialists will be happy to assist you with planning and configuration.



U	9 (6 + 2 x 1 1/2)	Page
Side panel depth mm	290.5	
Wiring space (depth in mm)	85.5	
For PCBs	6U 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> Ripac 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	132
<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	123
<b>6</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	24	127
Guide rails, keyable, green, for power supply	Polycarbonate UL 94-V0	2	127
<b>6a</b> Guide rails for I/O transition modules	Polycarbonate UL 94-V0	24	128
<b>7</b> EMC rear panel 6U/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 1 1/2U/84 HP, horizontally hinged	2.5 mm aluminium, clear-chromated	1	-
<b>9</b> Front panel 1 1/2U/84 HP, vented, horizontally hinged, for MPS monitoring	2.5 mm aluminium, clear-chromated	1	-
<b>10</b> EMC rear panel 1 1/2U/84 HP, vented	2.5 mm aluminium, clear-chromated	1	-
<b>11</b> EMC rear panel, 1 1/2U/84 HP, with connector cutout	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 RiCool	1 mm sheet steel, zinc-plated, passivated	1	-

**Electrical/electronic supply includes**

Description	Technical specifications		
<b>14</b> RiCool 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	-
<b>16</b> Power supply, plug-in, 6 U/12 HP	270 W, 5 V/35 A, +12 V/6 A, -12 V/2 A (VDE, IEC)	1	89
VME64x backplane	J1/J2, 12 slots (without P0)	1	79
<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 RiCool and backplane	-	2	-
<b>23</b> Power supply for RiCool	-	1	-
Temperature module	-	1	-

## 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 Pixus 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 Mbyte/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. Pixus 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 on 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					
Pin no.	Row z	Pin assignment for J1 connector VME			
		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					
Pin no.	Row z	Pin assignment for J2 connector VME			
		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



## Backplanes, technical specifications



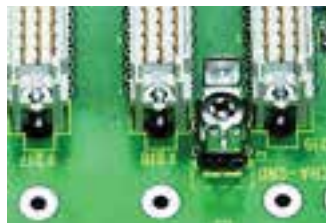
### Automatic daisy chaining J1 and J1/J2

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 sub-racks. 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

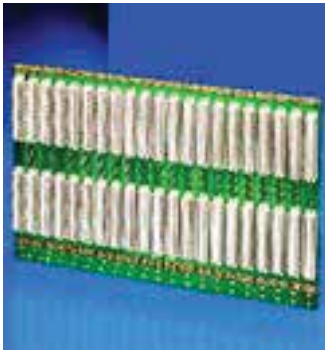
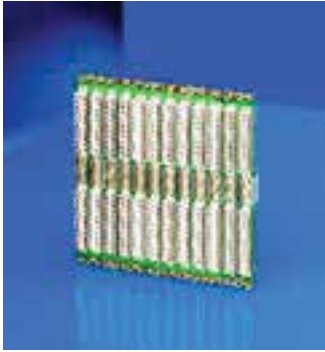
### Geographical address pin assignments (VME64x)

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	User Defined	User Defined	User Defined	User Defined	GND

## Backplanes VME64x



## 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 $\pm$ 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 $\pm$ 12 V, +5 V STBY, $\pm$ V1, $\pm$ 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
Current carrying capacity of the assembly per slot	+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 (may be switched to passive)
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 6U

Slots	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>

Slots	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 6.5U

Slots	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 121  
Insulating strips - See Page 122

## Backplanes VME



## 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 $\pm$ 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 $\pm$ 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	6U
Distance between slots	4 HP
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

Slots	Dimensions		Model No. RP
	Height mm	Width mm	
2	261.7	39.5	3686.495
3	261.7	59.5	3686.496
4	261.7	80	3686.497
5	261.7	100	3686.498
6	261.7	120.5	3686.499
7	261.7	141	3686.500
8	261.7	161.5	3686.501
9	261.7	181.5	3686.502
10	261.7	202	3686.503
11	261.7	222.5	3686.504
12	261.7	242.5	3686.505
13	261.7	263	3686.506
14	261.7	283	3686.507
15	261.7	303.5	3686.508
16	261.7	324	3686.509
17	261.7	344	3686.510
18	261.7	364.5	3686.511
19	261.7	385	3686.512
20	261.7	405	3686.513
21	261.7	425.5	3686.514

**Material:**

Fibreglass epoxy to IEC 60 249 (type FR4)

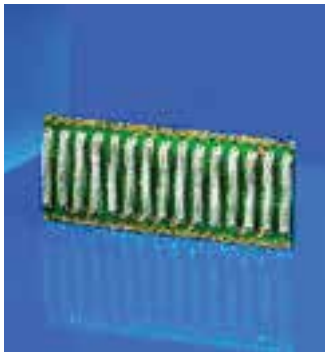
**Supply includes:**

Backplane, fully populated.

**Accessories:**

For backplane mounting:  
Conductive strips - See Page 121  
Insulating strips - See Page 122

## Backplanes VME

**VME J1 system bus****Technical specifications:**

	VME J1	VME J2
Number of layers	6	2
Layer structure	Optimised for optimum RF performance. Outer layers designed as shielding surface.	
PCB thickness	3.2 mm $\pm$ 10 %	3.2 mm $\pm$ 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, $\pm$ 12 V, $\pm$ 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 (may be switched to passive)	active (may be switched to passive)
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

Slots	Dimensions		Model No. RP
	Height mm	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>

Slots	Dimensions		Model No. RP
	Height mm	Width mm	
12	128.4	242.5	<b>3686.563</b>
13	128.4	263	<b>3686.564</b>
14	128.4	283	<b>3686.565</b>
15	128.4	303.5	<b>3686.566</b>
18	128.4	364.5	<b>3686.567</b>
20	128.4	405	<b>3686.568</b>
21	128.4	425.5	<b>3686.569</b>

**Material:**

Fibreglass epoxy to IEC 60 249 (type FR4)

**Supply includes:**

Backplane, fully populated.

**Accessories:**

For backplane mounting:  
Conductive strips - See Page 121  
Insulating strips - See Page 122

**VME J2 expansion bus****Material:**

Fibreglass epoxy to IEC 60 249 (type FR4)

**Supply includes:**

Backplane, fully populated.

**Accessories:**

For backplane mounting:  
Conductive strips - See Page 121  
Insulating strips - See Page 122

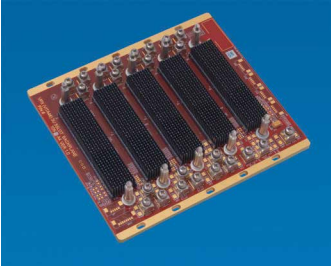
Slots	Dimensions		Model No. RP
	Height mm	Width mm	
3	128.4	59.5	<b>3686.585<sup>1)</sup></b>
4	128.4	80	<b>3686.586<sup>1)</sup></b>
5	128.4	100	<b>3686.587<sup>1)</sup></b>
6	128.4	120.5	<b>3686.588<sup>1)</sup></b>
7	128.4	141	<b>3686.589<sup>1)</sup></b>
8	128.4	161.5	<b>3686.590<sup>1)</sup></b>
9	128.4	181.5	<b>3686.591<sup>1)</sup></b>
10	128.4	202	<b>3686.592<sup>1)</sup></b>

Slots	Dimensions		Model No. RP
	Height mm	Width mm	
12	128.4	242.5	<b>3686.593<sup>1)</sup></b>
13	128.4	263	<b>3686.594<sup>1)</sup></b>
14	128.4	283	<b>3686.595<sup>1)</sup></b>
15	128.4	303.5	<b>3686.596<sup>1)</sup></b>
18	128.4	364.5	<b>3686.597<sup>1)</sup></b>
20	128.4	405	<b>3686.598<sup>1)</sup></b>
21	128.4	425.5	<b>3686.599<sup>1)</sup></b>

<sup>1)</sup> Delivery times available on request.



## Backplanes VPX



VPX 3U 5 Slot

### OPENVPX BACKPLANES - 3U, 6U

OpenVPX provides a versatile, high-speed architecture utilizing the rugged Eurocard form factor. There are backwards-compatibility options with VME/64x with hybrid backplanes.

As OpenVPX backplanes are based upon specific configuration profiles, most designs are customized. However, Pixus has several off-the-shelf 3U and 6U configurations. Other VPX derivations include VITA 66 for optical, and VITA 67 for RF. The Pixus team are experts in OpenVPX backplane design and can guide you through the complex profile option process.

### 3U

**Material:** Dependent of speed requirement, FR-4 standard. Nelco4000-SI typical for higher speeds.

**Supply includes:** Backplane, fully populated

**Accessories:** For backplane mounting: Conductive strips Insulating strips See Page 121 and 122

Slots	Dimensions*		Standard Profile	Part Number Prefix
	Height	Width (0.8" pitch)		
3	128.4	73.16	CEN03-15.2.9	VPX30-03AA
5	128.4	113.80	DIS05-15.2.13	VPX30-05BA
6	128.4	134.12	DIS06-15.2.7	VPX30-06BB
6	128.4	134.12	DIS06-15.2.14	VPX30-06BC
9	128.4	195.08	N/A	VPX30-09XX
18	128.4	377.96	N/A	VPX30-18XX

Approximate, consult factory for details

### 6U

**Material:** Dependent of speed requirement, FR-4 standard. Nelco4000-SI typical for higher speeds.

**Supply includes:** Backplane, fully populated

**Accessories:** For backplane mounting: Conductive strips Insulating strips See Page 121

Slots	Dimensions*		Standard Profile	Part Number Prefix
	Height	Width (0.8" pitch)		
2	262.19	52.84	DIS02-11.2.8	VPX60-02BA
5	262.19	113.80	DIS05-11.2.16	VPX60-05BB
6	262.19	134.12	DIS06-11.2.15	VPX60-06BC
8	262.19	174.76	HYB08-11.2.12	VPX60-08CA
9	262.19	195.08	CEN09-11.2.3	VPX60-09AA
10	262.19	215.40	CEN10-11.2.6	VPX60-10AB
10	262.19	215.40	CEN10-11.2.6	VPX60-11AC
17	262.19	393.20	HYB17-11.2.11	VPX60-12CB

Approximate, consult factory for details

## Accessories



### 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) offer 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.

### 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
- Choice of parameter levels
- Internal communications via I<sup>2</sup>C bus



RITTAL

CPCI  
AC-354



RITTAL

CPCI  
AC-354

Power  
Good

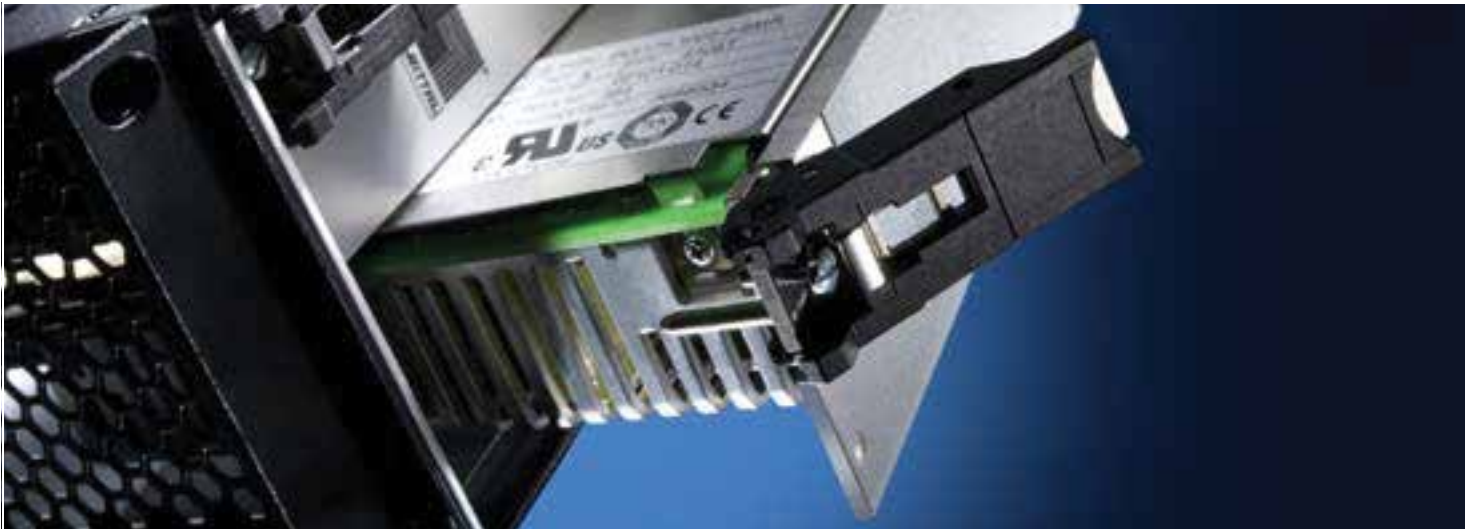


Power  
Good



# Power supplies

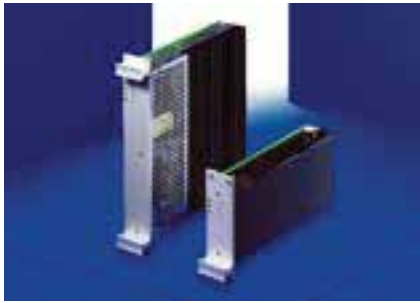
System											Power supplies	Design	Page		
cPCI	VME	ATX	1	2	U									13	
	■					■							Ripac power supplies . . . . .	plug-in . . . . .	89
■						■							Ripac power supplies . . . . .	plug-in . . . . .	90
■						■							Power supplies . . . . .	plug-in . . . . .	91





Overview

3U, 6U plug-in (VME)



130, 160, 270 watts  
See Page 88.

**Applications**

Plug-in power supply units for VMEbus systems with integral VMEbus signalling.

**Design features**

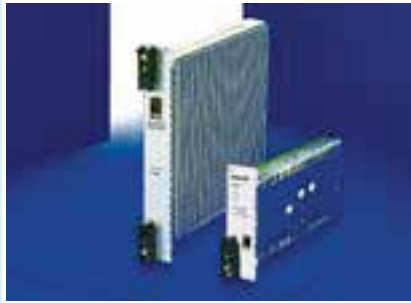
- 130, 160, 270 watts
- 482.6 mm (19") module to IEC 60 297-3
- Installation depth 160 mm
- Mounting in the subrack with the aid of guide rails
- Connection via connectors H15, IEC 60 603-2
- 3 outputs

**User benefits**

- 482.6 mm (19") compatible
- Quick exchange
- Approvals: EN 60 950, VDE 0805 and IEC 950



3U, 6U plug-in (cPCI)



175, 200, 250, 350 watts  
See Page 90.

**Applications**

Plug-in power supply units for cPCI systems.

**Design features**

- 175, 200, 250, 350 watts
- 482.6 mm (19") module to IEC 60 297-3
- Installation depth 160 mm
- Mounting in the subrack with the aid of guide rails
- Connection via Positronic connector 47-pole PICMG 2.9
- 4 outputs

**User benefits**

- 482.6 mm (19") compatible
- Quick exchange
- Approvals: EN 60 950 A1 – A4, CSA 22.2, UL 1950, C
- Complies with PICMG specifications





Pixus offers an extensive range of power supply units in various designs. The range includes 482.6 mm (19") compatible and open frame.

## 3U, 6U (VME)

130, 160, 270 W, plug-in,  
integral VMEbus signalling

### Design features

- 482.6 mm (19") module to IEC 60 297-3
- Mounting in the subrack with the aid of guide rails
- Connection via connectors H15, IEC 60 603-2
- 3 outputs



## Overview of benefits

### Open Frame (VME)

- 250, 600, 400, 1000 watts
- Minimal space requirements with a high power output
- Universal applications
- Approvals:  
UL 1950, IEC 60 950 and  
CSA 22.2 No. 234

### 3U, 6U (VME), plug-in

- 482.6 mm (19") compatible
- Quick exchange
- Approvals: IEC 60 950

### 3U, 6U (cPCI), plug-in

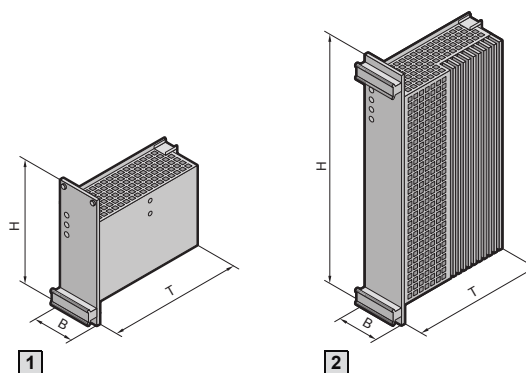
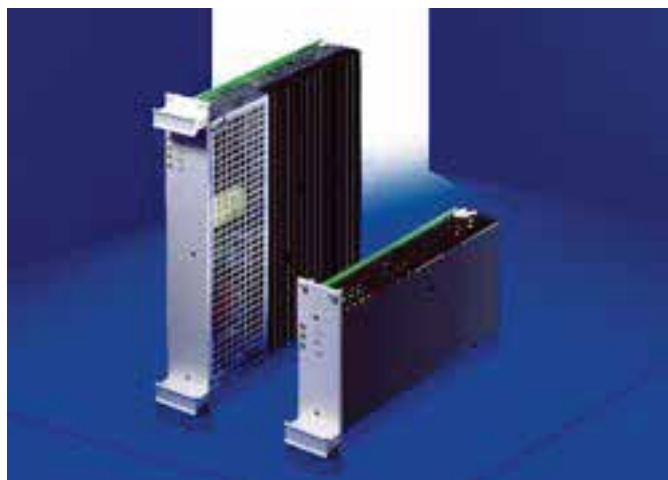
- 482.6 mm (19") compatible
- 175, 200, 250, 350 W
- Quick exchange

- Approvals: IEC 60 950 A1 – A4, CSA 22.2, UL 1950, CE
- PICMG specification

### PS/2 (AT/ATX)

- 250, 300, 400 W
- Universal applications
- Approvals: CSA

## Power supplies for VME, plug-in



**Connector assignment,**  
See Page 201.

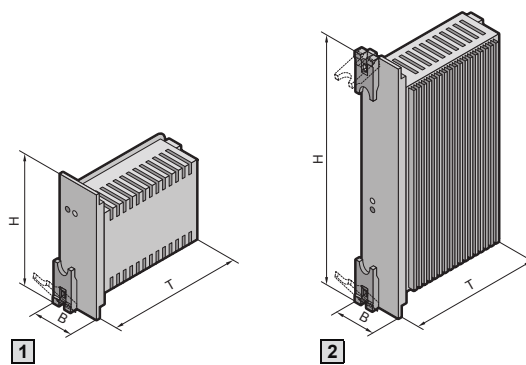
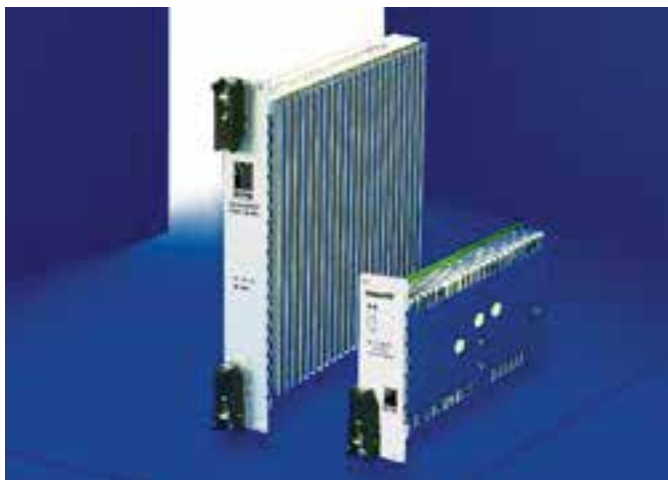
**Characteristic curve diagram,**  
See Page 201.

**Detailed drawing,**  
See Page 201.

	[1]			[2]		
<b>Height (H)</b>	3U			6U		
<b>Width (B)</b>	10 HP	12 HP		8 HP	12 HP	
<b>Depth (T) mm</b>	170.0	170.0		170.0	170.0	
<b>Model No. RP power supply</b>	<b>3686.469</b>	<b>3686.470</b>		<b>3686.471</b>	<b>3685.306</b>	
<b>Model No. RP front panel</b>	<b>3685.304</b>	<b>3685.305</b>		<b>3686.472</b>	<b>3685.307</b>	
<b>Output sizes</b>						
<b>Output</b>	1	2	3	1	2	3
<b>Output voltage</b>	5 V	+12 V	-12 V	5 V	+12 V	-12 V
<b>Output current 3U, 10 HP/6 U, 8 HP</b>	14 A	5 A	2 A	20 A	5 A	2 A
<b>Output current 3U, 12 HP/6 U, 12 HP</b>	20 A	5 A	2 A	35 A	6 A	2 A
<b>Maximum power output</b>	130 W (10 HP), 160 W (12 HP)			160 W (8 HP), 270 W (12 HP)		
<b>Setting range of output voltage</b>	± 5 %	–		± 5 %	–	
<b>Load compensation (load variation 0 – 100 %)</b>	< 0.1 %	< 1 %		< 0.1 %	< 1 %	
<b>Line regulation (<math>U_{e \text{ min.}} - U_{e \text{ max.}}</math>)</b>	< 0.2 % at 230 V AC + 15 % – 19 %			< 0.2 % at 99 – 138/187 – 264 V AC		
<b>Base load</b>	–			–		
<b>Compensation time</b>	< 1 ms at $I_a$ 20 – 80 %			–		
<b>Infeed compensation (Sense)</b>	± 0.25 V	–		± 0.25 V	–	
<b>Residual ripple (max.)</b>	< 35 mV		< 20 mV	< 45 mV <sub>SS</sub>	< 30 mV <sub>SS</sub>	< 15 mV <sub>SS</sub>
<b>Interference voltage</b>	50 mV typ. (bandwidth 20 MHz)			< 80 mV typ. (bandwidth 20 MHz)		
<b>Temperature coefficient</b>	0.025 %/K			–		
<b>Overvoltage protection (automatically recovery)</b>	125 % + 5 %	125 % + 10 %		125 % ± 5 %	120 % ± 10 %	
<b>Overload protection</b>	typ. 110 % $I_a$ rated, U/I characteristic curve acting on all outputs, outputs short circuit-resistant			–		
<b>Overtemperature protection</b>	Cuts out if the internal temperature is too high, cuts in again with hysteresis			–		
<b>AC-FAIL, SYSRESET</b>	TTL signals with 48 mA drive current, active low			–		
<b>ON delay</b>	typ. 500 ms			< 0.5 s		
<b>Ramp-up time</b>	< 30 ms			≤ 50 ms		
<b>Input variables</b>						
<b>Mains voltage <math>U_e</math></b>	AC 187 – 264 V, 50/60 Hz with automatic changeover to AC 90 – 138 V (in the range 90 – 94 V AC only 85 % rated load) or 264 – 347 V DC			AC 187 – 264 V, 50/60 Hz with automatic changeover to AC 99 – 138 V		
<b>Mains frequency</b>	47 – 63 Hz			–		
<b>Efficiency (typ.)</b>	80 %			–		
<b>Startup current limitation</b>	< 10 As typ. – in cold state < 15 As typ. – in warm state			< 25 As typ. – in cold state < 35 As typ. – in warm state		
<b>Fuse</b>	3.15 AT			4 AT		
General specifications, see page 201.						



# Ripac Power supplies For CPCI, plug-in



**Connector assignment,**  
See Page 201 & 202.

**Detailed drawing,**  
See Page 201 & 202.

	1												2			
Height (H)	3U												6U			
Width (B)	8 HP												8 HP			
Depth (T) mm	170.0												170.0			
Model No. RP AC power supply	3688.534			3688.694			3688.695			3688.528						
Model No. RP DC power supply	3688.537			3688.655			3688.696			3688.530						
<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>	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	5 V	3.3 V	12 V	-12 V	5 V	3.3 V	12 V	-12 V
Output current	25 A	20 A	6 A	1 A	30 A	25 A	6 A	1 A	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>	30 A max.				38 A max.				80 A max.							
Maximum power output	175 W				200 W				250 W				350 W			
Base load (only U <sub>1</sub> )	5 %				5 %				5 %				10 %			
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	-	-	-	-	-	0.25 V	0.25 V	0.25 V	-
Residual ripple (PARD)	50 mV or 1 % (bandwidth 20 MHz)															
Temperature coefficient	< ± 0.02 %/K (0° – 50°C) after 20 min. start-up time															
Overvoltage 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, 3.2 A max.												90 – 264 V AC, 47 – 63 Hz, 7 A			
Power Factor	0.99 at V AC 115 V, full load															
Starting current	15 A (115 V AC) cold start, 30 A (230 V AC) cold start															
Fuse	3.15 A, 250 V AC or 10 A, DC												10 A, 250 V AC or 20 A, DC			
<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 undervoltage of V <sub>1</sub> or V <sub>2</sub> (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															
<b>General specifications, see page 201 &amp; 202</b>																

## cPCI power supplies

**cPCI power supply**

Plug-type, 180 W

- Module, 3 U, 12 HP, plug-in
- Connector M24/8/IEC 60 603-2
- Automatic changeover 120/230 V AC
- All outputs permanently short-circuit resistant
- SELV outputs to EN 60 950
- Overvoltage protection on the primary and secondary circuits
- Overtemperature protection
- Control inputs: ENABLE, INHIBIT
- Signal output: DERATE
- EMC standards EN 50 081-1 and EN 50 082-2
- IEC 60 950/VDE 0805-SELV, protection category I, VDE 0100

**Technical specifications:**

180 W max.

5.1 V/20 A

3.3 V/14 A

12.0 V/2 A

-12.0 V/1 A

Detailed data specification sheet available on request.

Height U	Width HP	Model No. RP	
		Power supply	Front panel for power supply
3	12	<b>3686.682</b>	<b>3685.330</b>

## ATX power supplies



### Front Panel

#### for ATX power supply

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

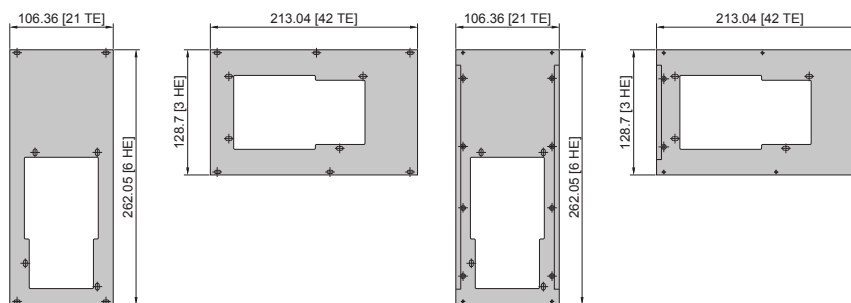
#### Material:

Aluminium, clear-chromated

#### Supply includes:

Assembly parts,  
EMC gaskets (with EMC version).

U	HP	Model No. RP	
		EMC	Non-EMC
3	42	<b>3685.331</b>	<b>3685.328</b>
6	21	<b>3685.332</b>	<b>3685.329</b>







# Pixus Technologies

## Subrack Systems

EMC	U									Subracks	Design	Page
	1	2	3	4	5	6	7	9				
			■			■				Ripac Easy	aluminium	100
			■			■		■		Ripac Vario	aluminium	101
				■				■		Ripac Vario	aluminium	102
■			■			■		■		Ripac Vario EMC	aluminium	103
■				■				■		Ripac Vario EMC	aluminium	104
			■			■				Ripac Compact	aluminium	105
			■			■				Ripac Vario Mobil	aluminium	106

EMC	U									Subracks, individual components	Page
	1	2	3	4	5	6	7	9			
										Table of horizontal rails	107
			■	■		■	■	■		Side panels and flanges	109
										Horizontal rails	112

EMC	U									Subrack accessories	Page
	1	2	3	4	5	6	7	9			
	■	■	■	■		■	■	■		Components for EMC installation	123
						■		■		Mounting kits	125
										Guide rails	126
										Keying/PCB ejectors	131
										Covers	132
										Subrack climate control	187
										Front panels, handles	138
			■			■				Ripac box type plug-in units	155
										Assembly parts	158

## Overview

## Ripac EASY



**For standard applications or demanding mechanical requirements**  
See Page 100

**Applications**

Subrack system for standard applications or for high mechanical loads. Also suitable for applications requiring simple handling and fast assembly. Suitable for the installation of standardised PCBs or board type plug-in units up to 400 mm deep.

**Design features**

- 482.6 mm (19") to IEC 60 297-3
- Height: 3 and 6U
- For board depth: 160 mm, 220 mm, 280 mm, 340 mm, 400 mm
- Fast, simple assembly thanks to pre-assembled screws and slots in the side panels
- Cover plates simply slide into place
- Horizontal rails with double screw-fastening
- Material: Aluminium, corrosion-resistant
- Mounting positions for horizontal rails on a 60 mm pitch pattern
- Horizontal rails at the rear with integral contact surface
- Installation of backplanes/midplanes or connectors
- Separate 482.6 mm (19") gland plate

**User benefits**

- Simple, fast assembly thanks to pre-assembled screws
- Slide-in cover plates
- Horizontal rails with integral contact surface (no insulating strips required)
- Double screw-fastening of the horizontal rails ensures stability even under heavy loads



## Ripac Vario



**For standard applications or complex configurations**  
See Page 101, 102

**Applications**

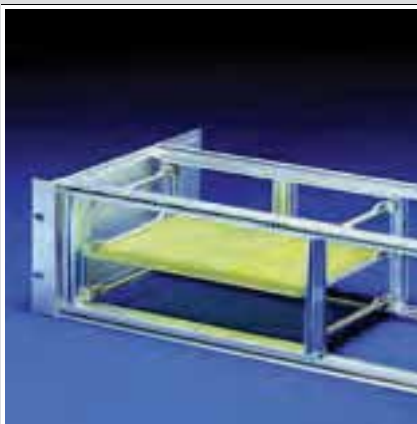
Subrack system for standard applications or complex configurations. Suitable for the installation of standardised PCBs or board type plug-in units up to 400 mm deep.

**Design features**

- 482.6 mm (19") rack-mount system to IEC 60 297-3
- 3, 4, 6, 7 and 9U
- For board formats up to 400 mm deep
- Side panels of aluminium, clear-chromated
- Mounting positions for horizontal rails on a 10 mm pitch pattern
- Installation of backplanes/midplanes or connectors
- Separate 482.6 mm (19") gland plate

**User benefits**

- Side panels with 10 mm pitch pattern of holes for variable system installation
- EMC upgradable
- 482.6 mm (19) gland plate may optionally be mounted on the front or rear
- Many size variants available as standard
- For backplane or connector mounting
- Extensive range of accessories



## Ripac Vario EMC



**For EMC applications and complex configurations**  
See Page 103

**Applications**

Subrack system for EMC applications or complex configurations. Suitable for the installation of standardised PCBs or board type plug-in units up to 400 mm deep.

**Design features**

- 482.6 mm (19") EMC rack-mount system to IEC 60 297-3
- 3, 4, 6, 7 and 9U
- For board formats up to 400 mm deep
- Side panels of aluminium, clear-chromated
- Mounting positions for horizontal rails on a 10 mm pitch pattern
- Installation of backplanes/midplanes or connectors
- Separate 482.6 mm (19") gland plate
- Including EMC springs

**User benefits**

- EMC version
- Side panels with 10 mm pitch pattern of holes for variable system installation
- 482.6 mm (19) gland plate may optionally be mounted on the front or rear
- Many size variants available as standard
- For backplane or connector mounting
- Extensive range of accessories



## Overview

### Ripac Compact



**For mounting plates or top hat rails**  
See Page 105

#### Applications

Subrack system for direct mounting in the enclosure. May optionally be mounted on a top hat rail or mounting plate. Suitable for the installation of standardised PCBs or board type plug-in units.

#### Design features

- Rack-mount system to IEC 60 297-3
- Prepared for mounting on top hat rails or directly on the mounting plate
- 3 and 6U
- For board formats up to 160 mm deep
- Installation width: 21 and 42 HP
- Side panels of aluminium, clear-chromated
- Installation of backplanes/midplanes

#### User benefits

- Direct mounting on mounting plates or rails
- Variable cable entry from below or above
- Side panels with 10 mm pitch pattern of holes for variable system installation
- For backplane mounting
- EMC version optional



### Ripac Vario Mobil



**For mobile applications**  
See Page 106

#### Applications

Subrack system for use in rail vehicles. Suitable for the installation of standardised PCBs or board type plug-in units.

#### Design features

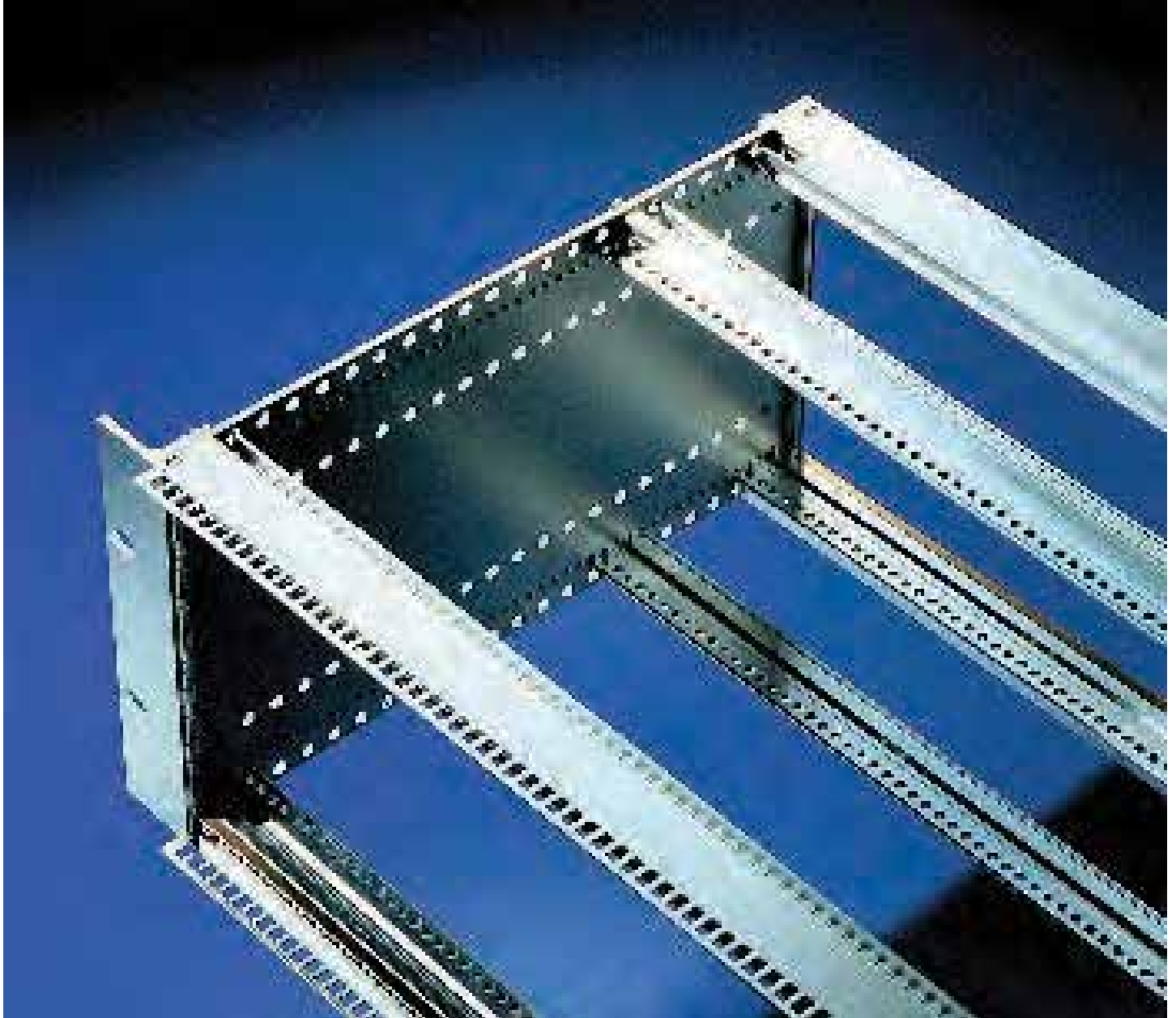
- 482.6 mm (19") rack-mount system to IEC 60 297-3
- Tested to EN 50 155, 1996 (electronic equipment for rail vehicles)
- 3 and 6U
- For board formats up to 220 mm deep
- Side panels of aluminium, clear-chromated
- Installation of backplanes/midplanes or connectors
- Fully assembled

#### User benefits

- Suitable for use in rail vehicles
- EMC versions available
- Side panels with 10 mm pitch pattern of holes for variable system installation
- Fully assembled
- For backplane or connector mounting



# Subracks



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

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

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

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





### Ripac Vario/Vario EMC

Complex applications thanks to numerous size variants and system accessories.

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

**EMC shielding** via horizontal and vertical EMC gaskets. Also suitable for retrofitting (with Ripac Vario).

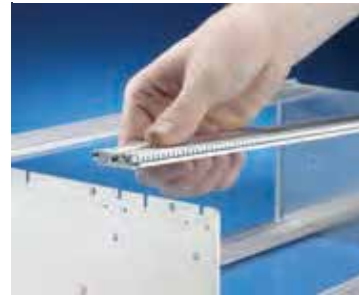
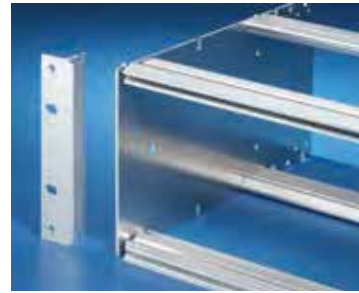
### Ripac Vario Mobil

- The subracks have been tested for use in the German national railway. Testing was conducted in accordance with standard EN 50 155, 1996 (electronic equipment in rail vehicles). The construction of the subracks tested conforms to IEC 48D.
- Vibration and shock-tested to: IEC 600-68-2-6, test Fc IEC 600-68-2-27, test Ea
- Supply includes: Subrack, fully assembled.



### Ripac Compact

Subracks for mounting on mounting plates or top hat rails.



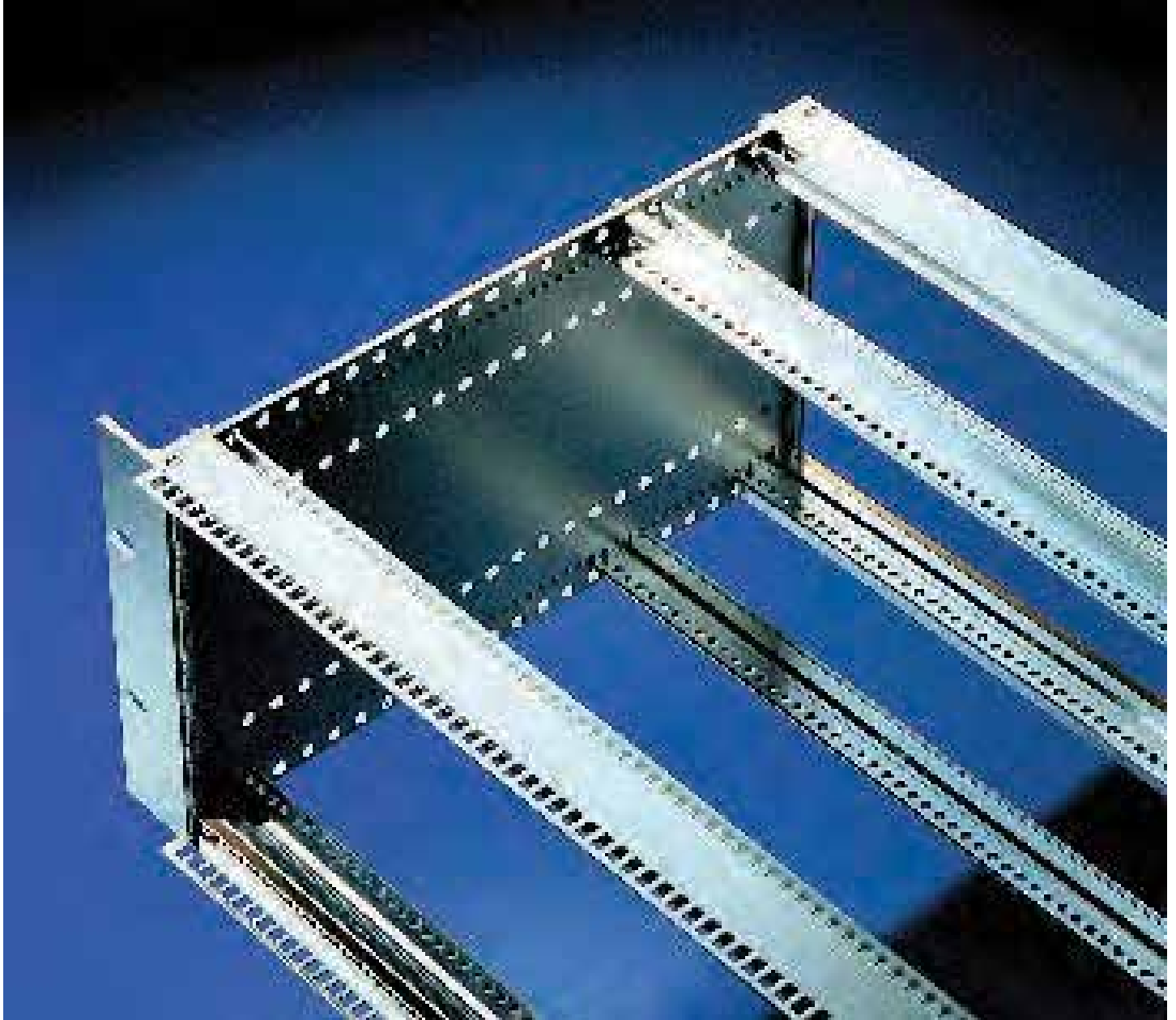
### Ripac EASY

Simple handling thanks to pre-assembled screws. Double screw-fastening of the rails ensures safety even under heavy loads

### Overview of benefits

- Modular subrack systems for individual configuration
- 5 basic versions for a variety of application areas
- Horizontal rails and accessories to fit all variants
- Prepared for or upgradable to EMC
- Fully assembled and wired on request
- Vibration and shock-tested

# Ripac EASY



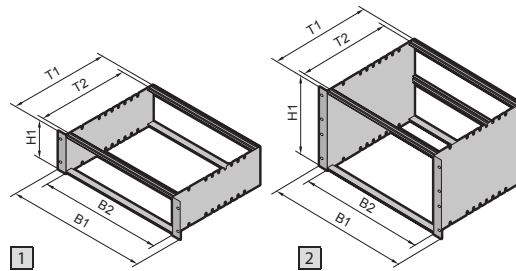
The modular concept of Ripac subracks facilitates a wide range of application options with a minimum of components.

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

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

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

# Ripac EASY



**Material/Surface finish:**

Side panels:  
2 mm aluminium, corrosion-resistant

Horizontal rails:  
Extruded aluminium section, corrosion-resistant  
Flanges: Pre-anodised

**Supply includes:**

Side panels, flanges, horizontal rails, threaded inserts, assembly screws.  
Rear horizontal rails (C4, C5) including prefitted assembly screws,  
front horizontal rails (A2) including prefitted assembly screws and threaded inserts.

**Tests:**

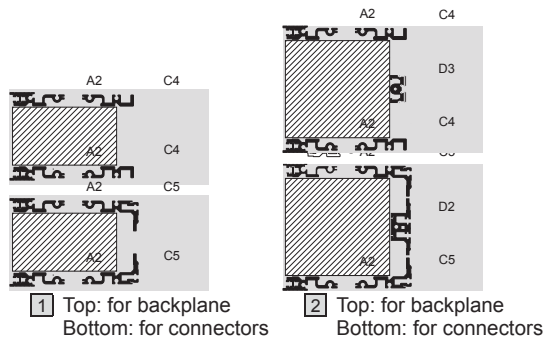
Vibration and shock-tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

**Standards:**

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

**Note:**

The backplanes may be fitted in direct contact with the rear horizontal rails.  
No additional insulating strips are required.



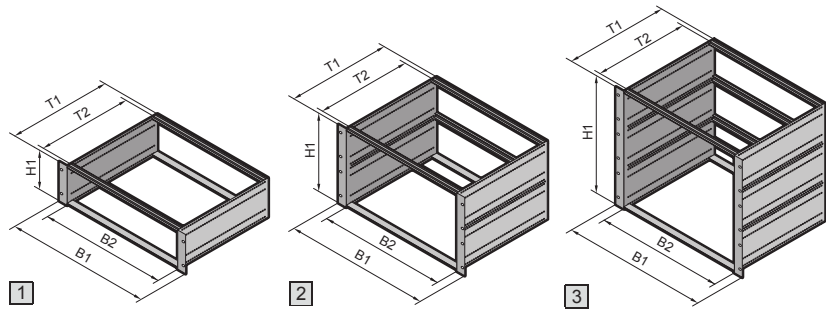
Custom configuration available upon request.

					Model No. RP				Page
					1			2	
U (H1)					3		6		
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	
482.6 (19")	84	175	160	160	3634.100	3634.150	3634.180	3634.230	
		235	220	220	3634.110	3634.160	3634.190	3634.240	
		295	280	280	3634.120	3634.170	3634.200	3634.250	
		355	340	340	3634.130	–	3634.210	–	
		415	400	400	3634.140	–	3634.220	–	

**Accessories**

Covers	132
Horizontal rails	112
Guide rails	126

# Ripac Vario 3U, 6U, 9U



**EMC** upgradable

B = Width  
H = Height  
T = Depth

**Material/Surface finish:**

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

**Supply includes:**

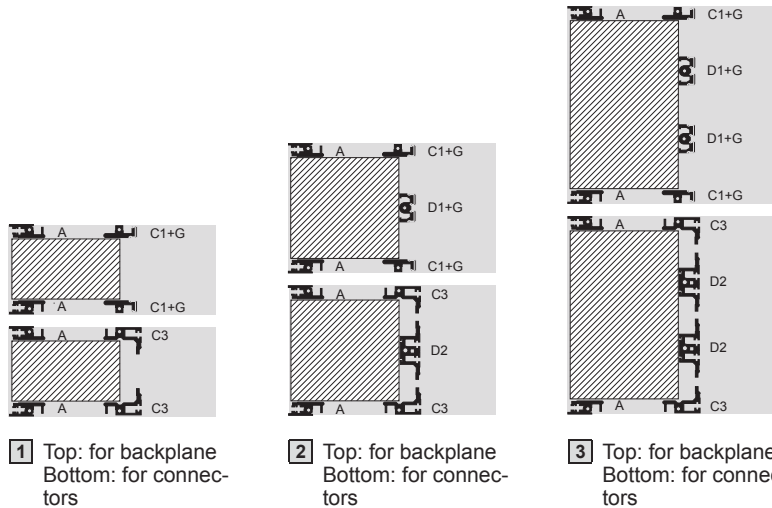
Flanges, side panels, horizontal  
rails, threaded inserts,  
insulating strips or Z rails.

**Tests:**

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

**Standards:**

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

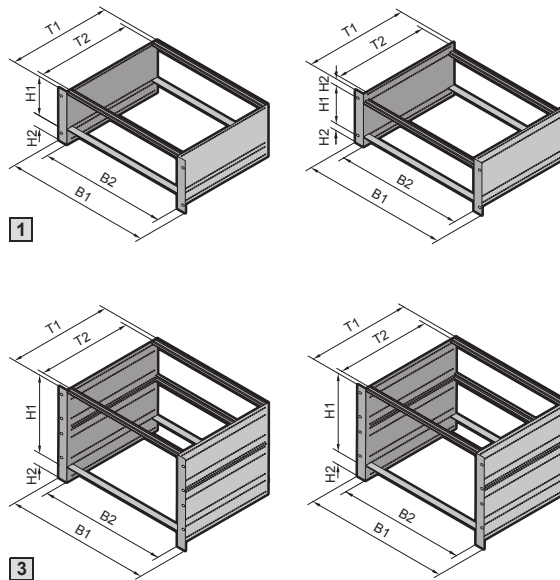


Custom configuration available upon request.

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



# Ripac Vario 4U, 7U



B = Width  
H = Height  
T = Depth

**Material/Surface finish:**

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

**Supply includes:**

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

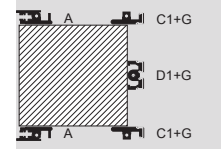
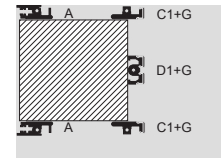
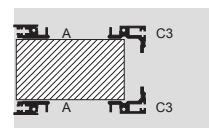
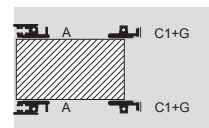
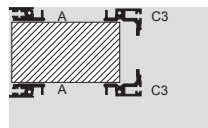
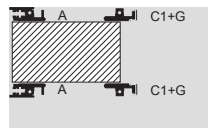
**Tests:**

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

**Standards:**

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

**EMC** upgradable



**1** Top: for backplane  
Bottom: for connectors

**2** Top: for backplane  
Bottom: for connectors

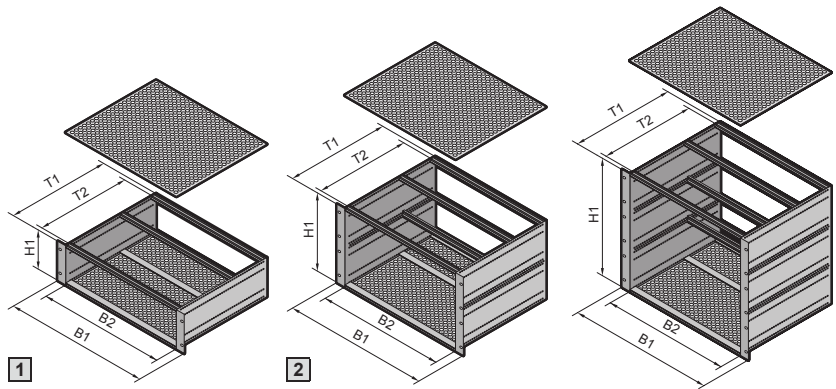
**3** Top: for backplane  
(6U + 1U)

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

Custom configuration available upon request.

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

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



B = Width  
H = Height  
T = Depth

**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:**

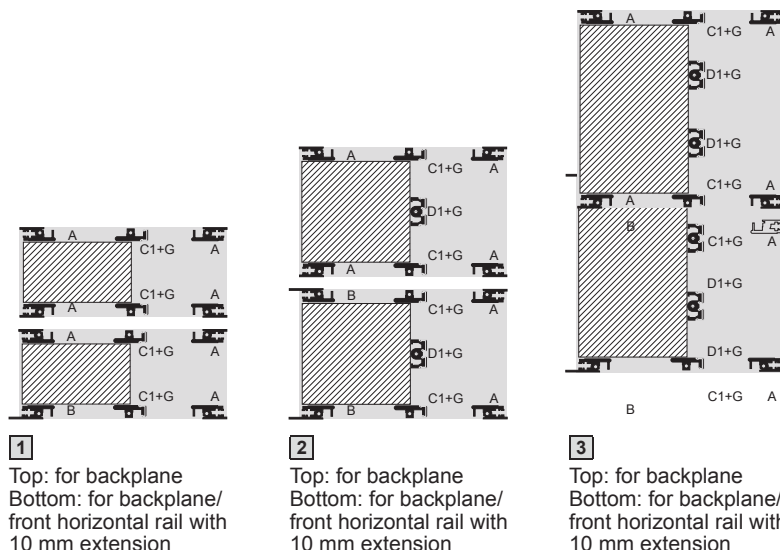
Flanges, rear trim, side panels,  
EMC gaskets, covers, mounting  
blocks, horizontal rails,  
insulating strips.

**Tests:**

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

**Standards:**

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



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

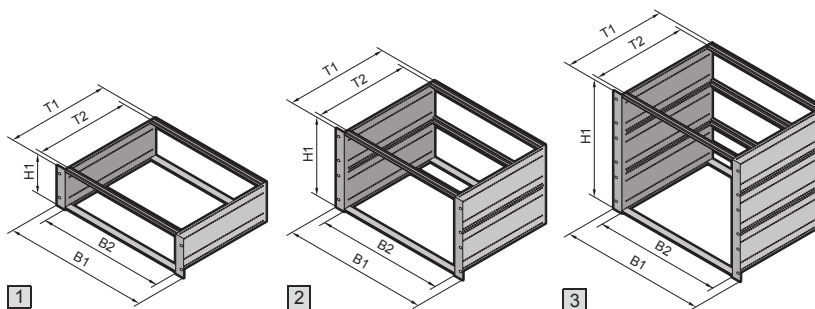
**2**  
Top: for backplane  
Bottom: for backplane/  
front horizontal rail with  
10 mm extension

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

					Model No. RP					
					<b>1</b>		<b>2</b>		<b>3</b>	
<b>U</b>					<b>3</b>		<b>6</b>		<b>9</b>	
<b>Height (H1) mm</b>					132		265,35		398,70	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>
482.6 (19")	84	245	220	160	<b>3684.128</b>	<b>3684.142</b>	<b>3684.156</b>	<b>3684.169</b>	-	-
		285	260	220	<b>3684.129</b>	<b>3684.143</b>	<b>3684.157</b>	<b>3684.170</b>	-	-
		305	280	220	<b>3685.241</b>	<b>3685.243</b>	<b>3685.242</b>	<b>3685.244</b>	-	-
		345	320	280	<b>3684.130</b>	<b>3684.144</b>	<b>3684.158</b>	<b>3684.171</b>	<b>3684.162</b>	<b>3684.175</b>
		405	380	340	<b>3684.131</b>	<b>3684.145</b>	<b>3684.159</b>	<b>3684.172</b>	<b>3684.163</b>	<b>3684.176</b>
		465	440	400	<b>3684.132</b>	<b>3684.146</b>	<b>3684.160</b>	<b>3684.173</b>	<b>3684.164</b>	<b>3684.177</b>
		525	500	400	<b>3684.133</b>	<b>3684.147</b>	<b>3684.161</b>	<b>3684.174</b>	<b>3684.165</b>	<b>3684.178</b>
		585	560	400	-	-	-	-	<b>3684.166</b>	<b>3684.179</b>

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

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



**EMC** upgradable

B = Width  
H = Height  
T = Depth

**Material/Surface finish:**

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

**Supply includes:**

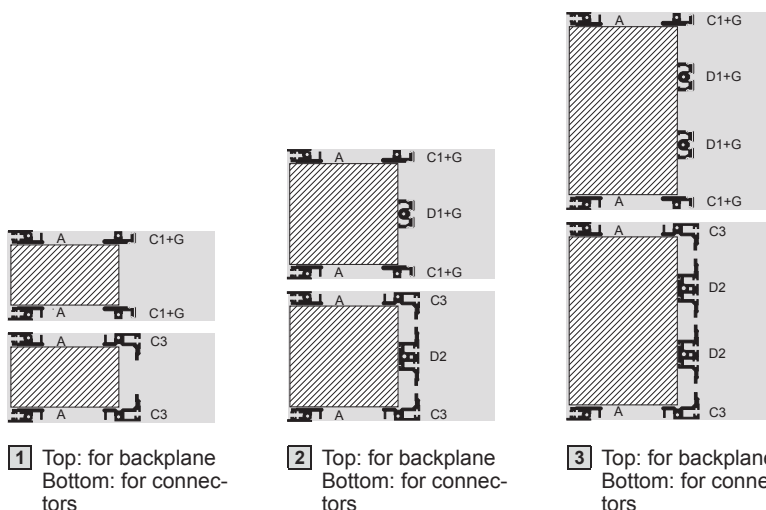
Flanges, side panels, horizontal  
rails, threaded inserts,  
insulating strips or Z rails.

**Tests:**

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

**Standards:**

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



**1** Top: for backplane  
Bottom: for connectors

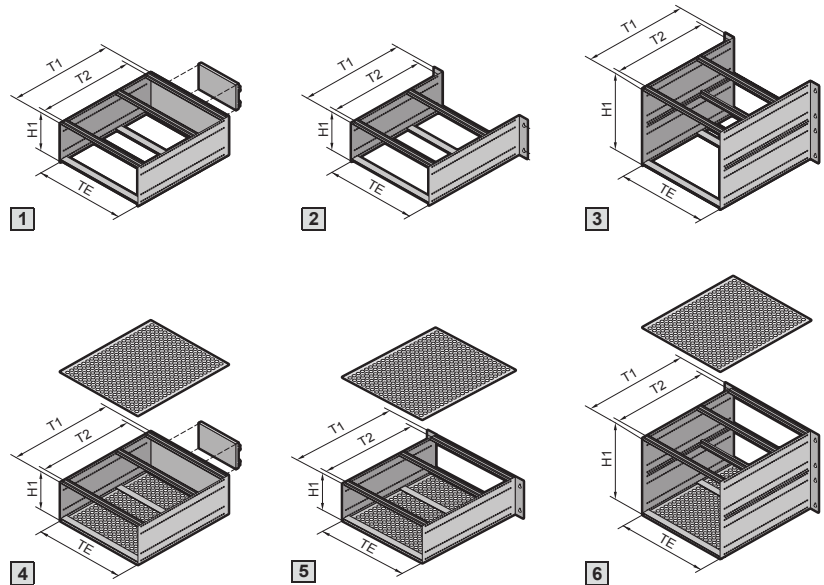
**2** Top: for backplane  
Bottom: for connectors

**3** Top: for backplane  
Bottom: for connectors

Custom configuration available upon request.

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

# Ripac Compact 3U, 6U



B = Width  
H = Height  
T = Depth

1 4

Ripac Compact 3 U  
for top-hat rail

2 3 5 6

Ripac Compact 3 U  
for mounting plate

**Material/Surface finish:**

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

**Supply includes:**

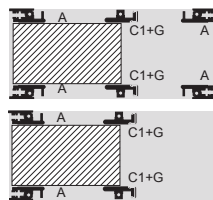
Side panels, rear trims, flanges  
for mounting plates or top-hat  
rail adaptors, EMC front/rear  
panels, EMC gaskets, covers,  
horizontal rails, threaded  
inserts, insulating strips.

**Tests:**

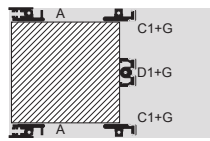
Vibration and shock-tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

**Standards:**

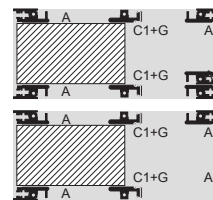
Ripac subracks are based  
on the system dimensions  
of IEC 60 297-3.



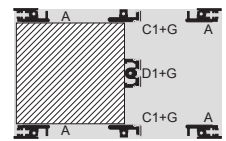
1 Top:  
for top-hat rail  
2 Bottom:  
for mounting plate



3 For mounting plate



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



6 EMC for  
mounting plate

Custom configuration available upon request.

			Model No. RP					Model No. RP EMC				
			1	2	1	2	3	4	5	4	5	6
<b>U</b>			3	3	3	3	6	3	3	3	3	6
<b>Height (H1) mm</b>			132				265.35	132				265.35
<b>HP</b>			21	21	42	42	42	21	21	42	42	42
<b>Attachment</b>			Top-hat rail	Mounting plate	Top-hat rail	Mounting plate	Mounting plate	Top-hat rail	Mounting plate	Top-hat rail	Mounting plate	Mounting plate
Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane									
225	200	160	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



# Ripac VarioMobil 3U, 6U



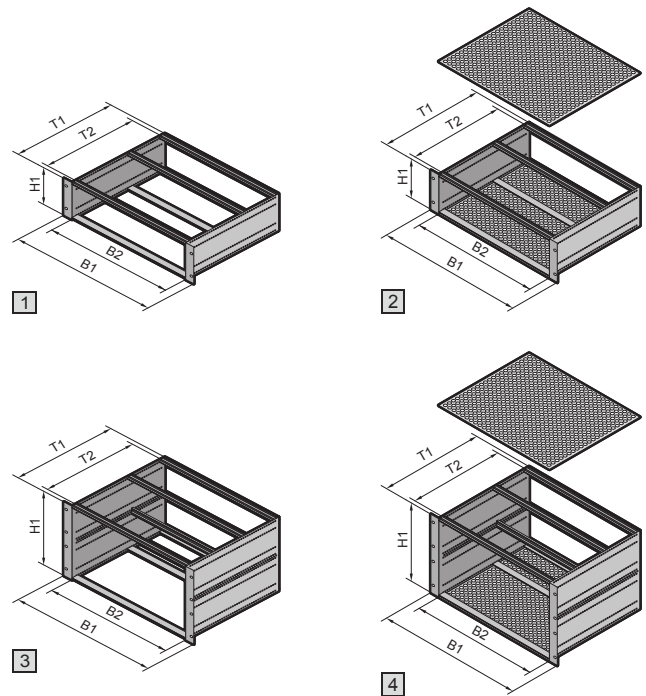
**Material/Surface finish:**  
 Side panels:  
 2.5 mm aluminium,  
 clear-chromated  
 482.6 mm (19") flanges and  
 horizontal rails:  
 Extruded aluminium section,  
 clear-chromated  
 Covers: Aluminium, unplated

**Supply includes:**  
 Flanges, rear trims, side panels,  
 EMC gaskets, covers, mounting  
 blocks, horizontal rails, threaded  
 inserts, insulating strips,  
 fully assembled.

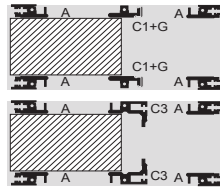
**Tests:**  
 Vibration and shock-tested to:  
 IEC 600-68-2-6 test Fc  
 IEC 600-68-2-27 test Ea  
 The subracks have been tested  
 for use in the German national  
 railway. Testing was conducted  
 in accordance with standard  
 EN 50 155, 1996 (Electronic  
 Equipment in Rail Vehicles).  
 The configuration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

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

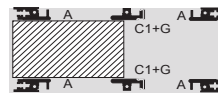
**Note:**  
 The subracks are supplied  
 fully assembled.



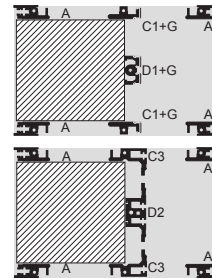
B = Width  
 H = Height  
 T = Depth



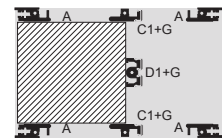
1 Top:  
 for backplane  
 Bottom:  
 for connector



2 EMC for backplane



3 Top:  
 for backplane  
 Bottom:  
 for connector



4 EMC for backplane

Custom configuration available upon request.

					Model No. RP		Model No. RP EMC		Model No. RP EMC	
					1		2		3	
					3	3	3	6	6	6
Height (H1) mm					132		265,35			
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connector IEC 60 603-2	For backplane	For backplane	For connector 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

**Boost your efficiency with  
our product expertise**



## Table of Horizontal rails

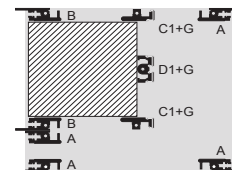
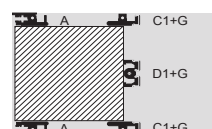
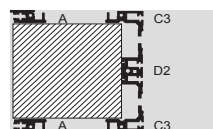
### Ripac extrusion system: Complete, simple and easy to manage

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

Main sections	A Front horizontal rail	A1 Front horizontal rail, double screw-fastening	A2 Front horizontal rail, double screw-fastening (Ripac EASY)	W (B) Front horizontal rail, with 10 mm extension, for extractor handle type IV or VII	B1 Double front horizontal rail, with 10 mm extension	B2 Front horizontal rail, with 10 mm extension, double screw-fastening	C1 Rear horizontal rail
Additional sections							
E Rear adaptor rail, centre, to accommodate guide rails	-	-	-	-	-	-	-
F Z rail for connector	-	-	-	-	-	-	
G Insulating strips <sup>1)</sup>	-	-	-	-	-	-	
H Conductive strips <sup>1)</sup>	-	-	-	-	-	-	
I Threaded insert							-
J Identification strips			-				
K EMC gaskets, horizontal			-				-

<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.



## Table of Horizontal rails

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

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

Main sections	C3 Rear horizontal rail, with integral Z-rail	C4 Rear horizontal rail, double screw-fastening, for backplane mounting (Ripac EASY)	C5 Rear horizontal rail, with integral Z-rail, double screw-fastening (Ripac EASY)	C6 Rear horizontal rail, double screw-fastening	D1 Rear horizontal rail, centre	D2 Rear horizontal rail, centre, with integral Z-rail (also for Ripac EASY)	D3 Rear horizontal rail, centre, with integral contact surface (Ripac EASY)	D4 Rear horizontal rail, for backplane mounting, double screw-fastening (Ripac EASY)
Additional sections								
E Rear adaptor rail, centre, to accommodate guide rails	-	-	-	-				-
F Z rail for connector	-	-	-			-	-	-
G Insulating strips <sup>1)</sup>	-	-	-			-	-	-
H Conductive strips <sup>1)</sup>	-	-	-			-	-	-
I Threaded insert		-			-		-	
J Identification strips		-	-		-	-	-	-
K EMC gaskets, horizontal	-	-	-	-	-	-	-	-

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



## Side panels and flanges



### Side Panels

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

### Material:

2.5 mm aluminium, clear-chromated

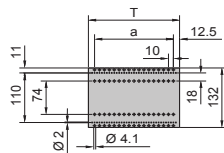


Custom versions available upon request.

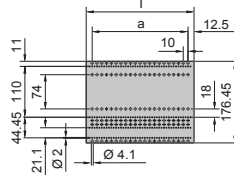
			Model No. RP								
U			3	4 (3 + 1)	4 (3 + 2 x 1/2)	6	7 (6 + 1)	7 (6 + 2 x 1/2)	9	10	11
D mm	a <sup>1)</sup> mm	Packs of									
185	160	1	3684.511	-	-	3684.529	-	-	-	-	-
225	200	1	3684.512	3685.793	3685.890	3684.530	3685.896	3685.893	3685.797	-	-
245	220	1	3684.513	3685.850	3685.891	3684.531	3685.897	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

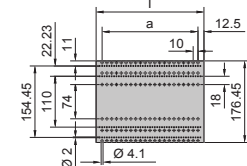
3U



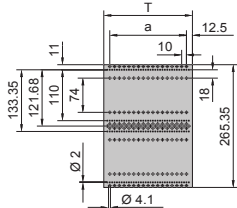
4U (3U + 1U)



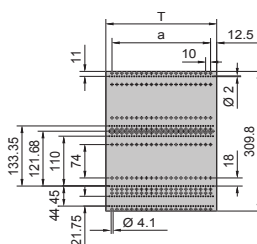
4U (3U + 2 x 1/2U)



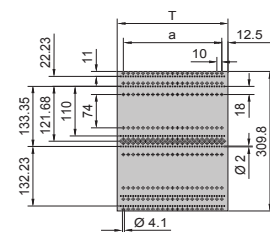
6U



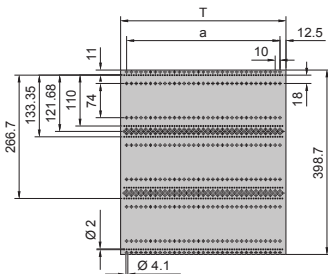
7U (6U + 1U)



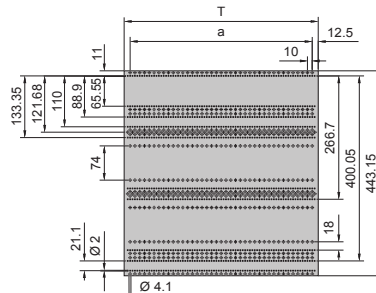
7U (6U + 2 x 1/2U)



9U



10U



11U

