Open Hardware.
Open Solution. Open Future.
Rittal solutions – efficient, flexible and scalable.
Open Compute Project (OCP)

Big data is a subject which is shaking up many areas of industry, commerce and trade. It is not only that data volumes are increasing exponentially. Also important is that efficient and fast data processing will in future be more and more decisive for business success.

The OCP community came together to find solutions to this challenge. The prime objective of the Open Compute Project (OCP) is to reduce the investment and operating costs, energy consumption and environmental impact of data centers by way of innovative, fully standardized IT architectures. To this end, the OCP provides an open platform for the sharing of ideas and know-how, as a vehicle for the definition of ground-breaking standards for the data center of the future.

IT infrastructure – Architectures for the future

As a leading manufacturer of IT infrastructures, Rittal is proud to be a member of the OCP community. Expertise in the standardization of data center architectures, in particular, has established Rittal’s reputation as a strong partner when it comes to demanding OCP-related tasks.

As well as building customized, application-specific racks, Rittal has also extended its standard portfolio to include the Open Compute Project segment. This means that Rittal can now handle customer-specific enquiries as well as requests for individual racks based on the latest OCP design. As well as the rack itself, Rittal also offers a comprehensive range of accessories, a special power supply unit, and a cooling system tailored to innovative OCP architecture, reinforcing Rittal's image as an operational technology (OT) portfolio provider to the OCP segment.

In a joint collaboration with Bel Power Solution & Protection, Rittal provides power supplies for OCP racks. These innovative and efficient power distributors are a key element of any OCP architecture. Substantial power savings can be made by transforming the power centrally and distributing it via the busbars that typify an OCP system.
Proven rack design for Open Compute

- Meets Open Rack standard 1.2 and 2.0
- UL/CE listed
- 12 V DC/48 V DC
- 13.2 kW – 40 kW
- 21” to 19” bridging adaptors
- Shelves configurable in 1 OU increments
- Modular configuration of busbars
Rittal – The System.
Faster – better – everywhere.
More flexibility in system expansion

The rack can be equipped with side panels and a range of doors to suit a standalone or bayed configuration and the adaptability to divide the rack into split zones, providing up to 19.8 kW in one or 6.6 kW in another, along with a central divider shelf enables colocation deployments.

Door
- Range of lock options available, from standard keyed swing handle to electronic combination or swipe card access

Side panel
- Sheet steel one piece for end of row instalment
Rittal – The System.
Faster – better – everywhere.
Variable interior

IT slide rails are available in 1 OU and 3 OU heights as well as the standard 2 OU and with new EIA adaptors the interior can be configured to suit customers' requirements.

Adaptor
- Standard 1 U 19” tool-free adaptor for installation of 19” hardware
- Special 19” front/rear EIA angle in various heights to accommodate multiple 19” equipment

IT slide rails
- The slide rails help to adapt your cabinet to the various server heights
- Available in 1 up to 3 OU
Standard R-OCP V2 rack

OCP rack, 41 OpenU (OU), for use in energy-efficient IT architectures based on the principles of the Open Compute Project. Depending on the variant, with split 12 V DC busbar fitted at the rear, or without busbar for individual configuration. Depending on accessories and the use of power packs, one (single) or two (dual) power zones may be used in the rack.

Benefits:
- Complies with Open Rack standard 1.2 and 2.0
- Stable, firmly linked frame structure on castors
- Height units in the Open Compute Design with a variable OpenU pitch pattern (OU) of between 1 OU (48 mm) and 3 OU
- Preconfigured slide rails for direct installation of servers, height-adjustable on the OpenU (OU) pitch pattern
- Prepared to accommodate special OCP hardware with a system width of 21" at the front
- Highly efficient power distribution by connecting the hardware directly to the 12 V DC busbar integrated into the rack
- 21”/19” adaptor for the additional integration of 482.6 mm (19") components optionally available
- Matching OCP power packs (power shelves) and batteries (back-up units) for central power supply and protection optionally available in the rack
- Extendible up to a maximum of 3 busbars
- UL/CE-listed

Supply includes:
- Firmly linked frame structure, with fitted castors, without doors, without side panels
- 2 pairs of slide rails, fitted
Please observe the product-specific scope of supply.

Standards:
- Open Rack Standard V2

<table>
<thead>
<tr>
<th>Units</th>
<th>OU</th>
<th>Packs of</th>
<th>41</th>
<th>41</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width mm</td>
<td></td>
<td></td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Height mm</td>
<td></td>
<td></td>
<td>2246</td>
<td>2246</td>
</tr>
<tr>
<td>Depth mm</td>
<td></td>
<td></td>
<td>1068</td>
<td>1068</td>
</tr>
<tr>
<td>Design</td>
<td>OCP V2 rack, deep, without busbar, for individual configuration</td>
<td>OCP V2 rack, deep, incl. preconfigured 12 V DC busbar with 2 power zones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load capacity</td>
<td></td>
<td>15,000 N (dynamic)</td>
<td>15,000 N (dynamic)</td>
<td></td>
</tr>
<tr>
<td>Power consumption min./max. kW</td>
<td></td>
<td>–</td>
<td>6.6 / 13.2</td>
<td></td>
</tr>
<tr>
<td>Model No.</td>
<td>1 pc(s).</td>
<td>7100.200</td>
<td>7100.221</td>
<td></td>
</tr>
</tbody>
</table>

Product-specific scope of supply

1 x 12 V DC busbar

Also required
12 V DC OCP busbar

Accessories
12 V DC OCP busbar
OCP adaptor
OCP V2 side panel
OCP PDU

Further technical information available on the Internet.
Open Compute Project
12 V DC OCP busbar

12 V DC OCP busbar for power distribution in a standard R-OCP V2 rack. The busbar is fitted at the rear and is used to supply power to the hardware in the rack. The hardware and busbar make contact via a clip connection at the rear of the hardware.

**Benefits:**
- Multiple 12 V DC busbars may be combined
- Simple configuration of two to one power zone
- Greater energy efficiency with silver-plated contact area

**Material:**
- Copper, zinc-plated, silver-plated

**Supply includes:**
- Assembly parts

<table>
<thead>
<tr>
<th>Design</th>
<th>Output range</th>
<th>Packs of</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 V DC</td>
<td>6.6 - 13.2 kW</td>
<td>1 pc(s).</td>
<td>7100.312</td>
</tr>
</tbody>
</table>

OCP V2 side panel

OCP V2 side panel, 1-piece, for finishing off a rack suite with standard R-OCP V2 racks.

**Material:**
- Sheet steel

**Supply includes:**
- Assembly parts

<table>
<thead>
<tr>
<th>Height mm</th>
<th>Depth mm</th>
<th>Packs of</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2246</td>
<td>1068</td>
<td>2 pc(s).</td>
<td>7100.501</td>
</tr>
</tbody>
</table>

OCP adaptor

21°/19°

Adaptor for installing 19° components in the 21° OCP rack system. The adaptor simply snaps onto the 21° profile.

<table>
<thead>
<tr>
<th>OU</th>
<th>Packs of</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 pc(s).</td>
<td>7100.401</td>
</tr>
</tbody>
</table>
OCP PDU

The OCP PDU installed on the rack distributes power for the data center to the power shelves fitted in the rack.

<table>
<thead>
<tr>
<th>Input voltage</th>
<th>Phases per infeed</th>
<th>Output voltage</th>
<th>Number of outputs</th>
<th>Rated voltage A</th>
<th>Type of electrical connection</th>
<th>Overvoltage protection</th>
<th>To fit Model No.</th>
<th>Packs of</th>
</tr>
</thead>
<tbody>
<tr>
<td>240 / 415 V AC</td>
<td>3-</td>
<td>240 / 415 V AC</td>
<td>2</td>
<td>32</td>
<td>IEC 60 309</td>
<td>■</td>
<td>7100.200/7100.221</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>277 / 480 V AC</td>
<td>2</td>
<td>277 / 480 V AC</td>
<td>2</td>
<td>20</td>
<td>L22-20P</td>
<td>■</td>
<td>7100.200/7100.221</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>277 / 480 V AC</td>
<td>1</td>
<td>277 / 480 V AC</td>
<td>2</td>
<td>30</td>
<td>L22-30P</td>
<td>■</td>
<td>7100.200/7100.221</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>48 V DC</td>
<td>–</td>
<td>48 V DC</td>
<td>2</td>
<td>250</td>
<td>–</td>
<td>–</td>
<td>7100.200/7100.221</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>200 / 415 V AC</td>
<td>1</td>
<td>54.5 V DC</td>
<td>3</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>7100.200</td>
<td>1 pc(s).</td>
</tr>
</tbody>
</table>

OCP Power Shelf

The power shelf connects the power supply to the busbar of the OCP rack, and at the same time functions as a rack-mounted frame for the power supply units and the battery back-up units. Depending on the variant, a built-in controller for monitoring the power supply is already fitted.

<table>
<thead>
<tr>
<th>Design</th>
<th>Number of slots</th>
<th>Redundancy</th>
<th>Output voltage</th>
<th>Active power kW</th>
<th>Number of outputs</th>
<th>Height OU</th>
<th>Product-specific scope of supply</th>
<th>To fit Model No.</th>
<th>Packs of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelf type: AC-DC</td>
<td>3 x PSU / 3 x UPS</td>
<td>2+1</td>
<td>12 V DC</td>
<td>6.6</td>
<td>1</td>
<td>3</td>
<td>–</td>
<td>7100.221</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>Shelf type: AC/DC-DC</td>
<td>6 x PSU</td>
<td>3+3 / 5+1</td>
<td>12 V DC</td>
<td>18</td>
<td>3</td>
<td>1</td>
<td>Built-in controller</td>
<td>7100.200</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>Shelf type: AC/DC-DC</td>
<td>6 x PSU</td>
<td>3+3 / 5+1</td>
<td>12 V DC</td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>Built-in controller</td>
<td>7100.221</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>Shelf type: AC/DC-DC</td>
<td>6 x PSU</td>
<td>3+3 / 5+1</td>
<td>48 V DC</td>
<td>24</td>
<td>1</td>
<td>1</td>
<td>Built-in controller</td>
<td>7100.200</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>Shelf type: DC-DC</td>
<td>6 x PSU</td>
<td>3+3 / 5+1</td>
<td>12 V DC</td>
<td>15</td>
<td>1</td>
<td>1</td>
<td>Built-in controller</td>
<td>7100.221</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>Blanking cover</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>7100.921</td>
<td>1 pc(s).</td>
</tr>
<tr>
<td>Blanking cover</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>7100.921</td>
<td>1 pc(s).</td>
</tr>
</tbody>
</table>

Accessories:

- OCP PDU, see page 10
- OCP Power Supply Unit, see page 11
- OCP Battery Back-up Unit, see page 11
- OCP Power Supply Unit, see page 11
OCP Power Supply Unit

The power supply unit (PSU) is a power pack which centrally transforms the current or voltage in an OCP rack. The PSUs operate in parallel mode. A power shelf is needed for installation of the power supply units. Depending on the power shelf, up to 6 PSUs may be installed.

Benefits:
– May be connected with the system operational
– Parallel operation with active load distribution

<table>
<thead>
<tr>
<th>Design</th>
<th>Input voltage</th>
<th>Output voltage</th>
<th>Active power (kW)</th>
<th>Power pack</th>
<th>To fit Model No.</th>
<th>Packs of</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Module PM</td>
<td>200 - 277 V AC</td>
<td>12.6 V DC</td>
<td>3.3</td>
<td>AC - DC</td>
<td>7100.921</td>
<td>1 pc(s).</td>
<td>7100.931</td>
</tr>
<tr>
<td>Power Module PM</td>
<td>90 - 300 V AC / 240 - 400 V DC</td>
<td>12.3 V DC</td>
<td>3</td>
<td>AC/DC - DC</td>
<td>7100.922/ 7100.923</td>
<td>1 pc(s).</td>
<td>7100.932</td>
</tr>
<tr>
<td>Power Module PM</td>
<td>90 - 300 V AC / 192 - 400 V DC</td>
<td>12.3 V DC</td>
<td>3.6</td>
<td>AC/DC - DC</td>
<td>7100.922/ 7100.923</td>
<td>1 pc(s).</td>
<td>7100.933</td>
</tr>
<tr>
<td>Power Module PM</td>
<td>200 - 277 V AC / 192 - 400 V DC</td>
<td>48 V DC</td>
<td>4</td>
<td>AC/DC - DC</td>
<td>7100.924</td>
<td>1 pc(s).</td>
<td>7100.934</td>
</tr>
<tr>
<td>Power Module PM</td>
<td>40 - 72 V DC</td>
<td>12.5 V DC</td>
<td>3</td>
<td>DC - DC</td>
<td>7100.925</td>
<td>1 pc(s).</td>
<td>7100.935</td>
</tr>
<tr>
<td>Blank cover</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>7100.922/ 7100.923</td>
<td>1 pc(s).</td>
<td>7100.963</td>
</tr>
</tbody>
</table>

OCP Battery Back-up Unit

The battery back-up unit is an internal UPS in OCP architecture housed inside the rack, to ensure a controlled shutdown of the hardware and data backup in the event of a power failure.

Benefits:
– May be connected with the system operational
– Parallel operation with active load distribution

<table>
<thead>
<tr>
<th>Design</th>
<th>Input voltage</th>
<th>Active power (kW)</th>
<th>To fit Model No.</th>
<th>Packs of</th>
<th>Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium ion battery back-up unit</td>
<td>52.5 V DC</td>
<td>3.6</td>
<td>7100.921</td>
<td>1 pc(s).</td>
<td>7100.951</td>
</tr>
</tbody>
</table>
You can find the contact details of all Rittal companies throughout the world here.

www.rittal.com/contact