Configurable System Power Solutions

Configurable System Power Introduction

Product Manager | MEAN WELL Product Strategy Center
Paul Hsu | Paul.Hsu@meanwell.com
Outline

1. Introduction to Configurable PSU
2. Product Category & Roadmap
3. Specs and Selling Points
4. Product Advantages
5. Product Applications
Brief Introduction to Configurable PSU

Why Choose Configurable Modular PSU?

1. Customized Design
   Recommend power solution per customer requirements!

2. Modular Design
   Comprehensive product line helps on quick configuration and selection!

3. Smart Design
   Electrical parameters are adjustable, widest range of applications!

4. Differentiated Service
   Stock in for off-the-shelf products, fulfill small quantity PO in 48hrs!
# Modular PSU Series and Selection Guide

<table>
<thead>
<tr>
<th>Series</th>
<th>Front-end</th>
<th>Total Power</th>
<th>Photo</th>
<th>Module Cards</th>
<th>Output Voltage</th>
<th>Output Power</th>
<th>Key Features</th>
</tr>
</thead>
</table>
| NMP    | NMP1K2 (6 Slots) | 1.2kW       | ![NMP1K2](image) | NMS-240       | 5/12/24/48V   | 180W~240W   | 1. 1U Slim Design  
2. PV & PC functions  
3. 62368-1 & 60601-1 ITE & Medical Dual Safety  
4. Can operate in Parallel or Series Connection  
5. 2x MOPP |
|        | NMP650 (4 Slots) | 650W       | ![NMP650](image) |              |                |             |                                                   |
| UMP    | UMP-400 (3 Slots) | 400W       | ![UMP-400](image) | NID-35/65/100 | 5/12/15/24/-5/-12/-15V | 35~100W | 1. <1U Slim Design  
2. Output Voltage Adjustable  
3. 62368-1 ITE Safety Design refer to 60601-1  
4. 2x MOPP |
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</table>
| MP     | [Image](#) | 1kW         | [Image](#) | MS (Single Output) | 2/ 3.3/ 5/ 7.5/ 12/ 15/ 18/ 24/ 27/ 33/ 48V | 75~360W | 1. Output Voltage Adjustable  
2. 62368-1 ITE Safety |
| MP     | [Image](#) | 450/650 W  | [Image](#) | MD (Dual Output) | 5V/5V 5V/12V 5V/15V 24V/5V 24V/12V 12V/12V 15V/15V | 100W   | 3. Can operate in Parallel or Series Connection |
Configurable Power Roadmap

**Configurable Power**

**Configurable and Modular 5/7 slots**
- **Front-end:** MP-450/650/1K0
- **Output Modules:**
  - MS-75/150/210/300/360
  - MD-100 (Dual Output)

**Configurable and Modular 4/6 slots, IEC60601 + IEC62368, 2x MOPP**
- **Front-end:** NMP650/1K2
- **Output Modules:**
  - NMS-240

**Fan-less & Modular; 2x MOPP, Vo: 1-4 channels**
- **AC/DC PSU:** UMP-400
- **Output Modules:**
  - NID35/65/100

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Specs and Selling Points

Key Features - Modular PSU

• Utmost flexibility in building power solutions!

• Fast customized configurations/Parameters
  Add more D/D modules: multiply output power;
  D/D modules in parallel/series operation: multiply
  output current/voltage;
  PV/PC function: adjust voltage/Constant Current
  Limit

• Create a multiple output PSU by just plugging in
  NMS-240 D/D module cards,
  maximum 12 channels!
## Advantages - Modular PSU Series

<table>
<thead>
<tr>
<th>Complete Product Line</th>
<th>Complete Safety Approvals</th>
<th>Distribution Channel &amp; Service</th>
<th>Brand Awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case: 400-1200W DC Modules: 35-360W</td>
<td>62368-1 ITE Safety</td>
<td>Global Sales Channel</td>
<td>International Brand</td>
</tr>
<tr>
<td>Offer service to customize product</td>
<td>CB report</td>
<td>Global After-sales Service</td>
<td>Transparent product Info</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fast delivery with small quantity PO</td>
<td>Your reliable power partner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 days Delivery</td>
<td></td>
</tr>
</tbody>
</table>

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Applications - Modular PSU

Industrial Automation

- 3D Printer
  - Space Constraint
  - Drive Motor & Control Signals

- Flight Simulator
  - Need Multiple Output channels
  - Drive all Displays, Panels and Control Devices

Medical Equipment

- Medical Instruments
  - Space constraint
  - Need to comply with 60601-1 & 2x MOPP standards

- MRI Scanner
  - Space constraint
  - Drive Motor & Diagnostic Computer
Brief Introduction to Rack PSU

Why Choose Rack PSU?

Intelligent
- Power management controller and interface realize remote control (1.6KW+ models)
- Digitalized design, precise control on parameters

Modular
- Multiple selections
- Pair with 1U power shelf, flexibly expand output power
- Support hot-plug (swap)

Customizable
- Programmable output voltage and current

Systematic
- Combines with power management controller and power shelf to provide System Power Solution
Building Block Design
Fast Solution for Customized Power Requirements!

Power Module + Power Shelf = Power Solution
# Rack Power & Charger Selection Guide

<table>
<thead>
<tr>
<th>Photo</th>
<th>Type</th>
<th>Model No.</th>
<th>Output Power</th>
<th>Output Voltage</th>
<th>Photo</th>
<th>Model No.</th>
<th>Output Power</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="PSU" /></td>
<td>PSU</td>
<td>RCP-1000</td>
<td>1kW</td>
<td>12/24/48V</td>
<td><img src="image2.jpg" alt="PSU" /></td>
<td>RCP-1U</td>
<td>3kW</td>
<td>PV Function, Hot Plug, Support PMBus, Parallel operation (Max. 8kW)</td>
</tr>
<tr>
<td><img src="image3.jpg" alt="PSU" /></td>
<td>PSU</td>
<td>RCP-1600</td>
<td>1.6kW</td>
<td>12/24/48V</td>
<td><img src="image4.jpg" alt="PSU" /></td>
<td>RHP-1U</td>
<td>8kW</td>
<td>PV &amp; PC PV Function, Hot Plug, Digital control, Support PMBus/CANbus, Parallel operation (Max. 24kW), Built-in charging curves (Charger)</td>
</tr>
<tr>
<td><img src="image5.jpg" alt="Charger" /></td>
<td>Charger</td>
<td>RCB-1600</td>
<td>1.6kW</td>
<td>14.4/28.8/57.6V</td>
<td><img src="image6.jpg" alt="Charger" /></td>
<td>RCB-1600</td>
<td>1.6kW</td>
<td>14.4/28.8/57.6V</td>
</tr>
<tr>
<td><img src="image7.jpg" alt="PSU" /></td>
<td>PSU</td>
<td>RCP-2000</td>
<td>2kW</td>
<td>12/24/48V</td>
<td><img src="image8.jpg" alt="PSU" /></td>
<td>RKP-1U</td>
<td>6kW</td>
<td>PV Function, Hot Plug, Support PMBus, Parallel operation (Max. 18kW)</td>
</tr>
<tr>
<td><img src="image9.jpg" alt="PSU" /></td>
<td>PSU</td>
<td>DRP-3200</td>
<td>3.2kW</td>
<td>24/48V</td>
<td><img src="image10.jpg" alt="PSU" /></td>
<td>DHP-1UT</td>
<td>12.8kW</td>
<td>PV &amp; PC PV Function, Hot Plug, Digital control, Support PMBus/CANbus, Parallel operation (Max. 128kW), Built-in charging curves (Charger)</td>
</tr>
<tr>
<td><img src="image11.jpg" alt="Charger" /></td>
<td>Charger</td>
<td>DBR-3200</td>
<td>3.2kW</td>
<td>28.8/57.6V</td>
<td><img src="image12.jpg" alt="Charger" /></td>
<td>DBR-3200</td>
<td>3.2kW</td>
<td>28.8/57.6V</td>
</tr>
</tbody>
</table>
Configurable Power Roadmap

Rack Mount Power

**RCP-1000/1000-C** 1kW
**RCP-1U** Max. 3kW

**RCP/RCB-1600** 1.6kW
**RHP-1U** Max. 8kW

**RCP-2000** 2kW
**RKP-1U** Max. 6kW

**DRP/DBR-3200** 3.2kW
**DHP-1UT-A** Max. 12.8kW

Watt: 1kW 1.5kW 2kW 3kW 6kW 10kW 15k

Digitalized

Fully Digitalized
Specs and Selling Points

Rack PSU Key Features

• Modular Design
  Output connector mates with power shelf for easy installation.

• Support Hot-plug (Swap)
  Power modules can be changed while in operation.

• Support N+1 & Parallel Operation
  Active current sharing; 1+1, 2+1, 3+1, N+1 redundancy and parallel operation.

• Built-in Communication Protocols
  Realize system power management.
Specs and Selling Points
Rack PSU Key Features

• **High Temperature Operation**
  Operates in IT application environment for up to 50°C.
  Built-in fans forced air cooling.

• **Built-in Protections/Signals**
  When abnormal conditions occur, power supply will automatically trigger protection mode to prevent further damage to system.
  When abnormal conditions occur, power supply will output status signals to communicate with central control.
# Advantages – Rack PSU Series

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<tr>
<td>• Power Module: 1000-3200W Power Shelf: 3k-12.8kW Max. Power <strong>128kW</strong>!</td>
<td>• 62368-1 ITE Safety</td>
<td>• Global Sales Channel</td>
<td>• International Brand</td>
</tr>
<tr>
<td>• Offer service to customize product</td>
<td>• CB report</td>
<td>• Global After-sales Service</td>
<td>• Transparent product Info</td>
</tr>
<tr>
<td></td>
<td>• Complete factory Quality Management Systems: ISO9001 ISO14001 ISO45001 KS/PSE certified factory</td>
<td>• Online inventory check service</td>
<td>• Complete marketing events/teams</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fast delivery with small quantity PO</td>
<td>• Your reliable power partner</td>
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<tr>
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<td>• 30 days Delivery</td>
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### Applications - Rack PSU

#### Industrial Automation

<table>
<thead>
<tr>
<th>UV Curing Printer</th>
<th>Telecom Equipment</th>
<th>Stage Lighting</th>
<th>Burn-In Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Heavy industrial machinery</td>
<td>- Distributed or Centralized power configuration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Heavy power consuming</td>
<td>- Need high wattage and centralized power system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Powered by 48Vdc</td>
<td>- Driven by centralized power system</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- DMX lighting control (24Vdc power bus)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Extremely heavy power consuming</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Needs centralized power system</td>
<td></td>
<td></td>
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WHY MEAN WELL

- **Products**
  More than 10,000 models, continues to introduce 10% new models and EOL 5% every year

- **Quality**
  High reliability and quality indicator
  Post-sales failure rate decreases by 10% each year

- **Cost**
  High cost-performance products, stable material price, complete supply chain integration

- **Delivery**
  24-hour delivery for small amount order.
  14-day delivery for frequent purchase standard products.

- **Service**
  MEAN WELL Group and distributors provide services 24 hours a day, and commit to reply within 24 hours

- **Reliable Relationship**
  75% of revenue come from long-term distributors and customers