Medical Power Supply
AC/DC Switching Power Supplies & DC/DC Converters
Established in 1982, MEAN WELL is a leading standard switching power supply manufacturers in the world. MEAN WELL currently operates under five companies in Taiwan, China, USA and Europe and three factories in Taiwan, GuangZhou and SuZhou. The product lines include AC/DC switching power supplies, DC/DC converters, waterproof LED drivers, DC/AC inverters and battery chargers. We have over 9,500 standard models widely used in medical, automation, communication, LED lighting, moving sign, and office automation fields.

The whole product lines have supplied more than 70 series and 400 models in total for customers to choose, covering 5~1200W and offering 3~55V single/multiple output voltages. We have devoted to developing green medical power supplies, thus unveils the energy-saving medical power supplies in compliance with DoE Level VI.
The medical power supplies of MEAN WELL not only comply with IEC60601-1 3rd version but also possess 2xMOPP and MOOP levels, providing the highest level of isolation protection that are suitable to be applied to type BF (patient contact) devices. The whole product line all passes the international safety regulations — UL/CUL/TUV/CB/CE/FCC and electromagnetic compatibility (EMC) testing thus further assure the safety for usage that is suitable for household medical devices and various medical apparatuses used in the hospital.

With more than 36 years of experience in R&D and production of standard power supplies, MEAN WELL has ten product category covering over 9,500 models, to provide “One Stop Shopping” power solutions. Every product in the MEAN WELL range is the result of rigid procedures governing design, design verification test (DVT), design quality test (DQT), component selection, pilot-run production, and mass production.

With more than 200 distributors globally, the MEAN WELL products are distributed to over 80 countries worldwide. The small size orders can expect delivery within 24 hours without MOQ requirement. If you are looking for switching power supply with high reliability, good quality, reasonable price and full series products which can satisfy your various demands, MEAN WELL, a total solution provider, is definitely your first choice!
The brand name “MEAN WELL” is defined as “have good intentions”. We strongly believe that the product quality is the life of power supply manufacturer. “To become the reliable power partner” has been the motivation for MEAN WELL to grow continuously.

In 1994, MEAN WELL acquired the ISO9001 certification and began to implement the total quality management (TQM) system, which are audited by TUV annually to continuous review and improvement. In April 2013, MEAN WELL acquired the ISO14000 certification and obtained the OHSAS18001 system (ESH, environmental safety and health) in 2015, to take the concept of environmental protection into action, and expect to create a safe and healthy life.
MEAN WELL has a complete quality management system. To ensure product quality, 100% burn-in test, function test and pressure test have been applied in manufacturing process, while the MIL-105E sampling method used in IQC, PCBQC (semi-finished products testing) and FQC phases. In the R&D stage, MEAN WELL quality engineers customize the “Test Plan” for each product, to complete the verifications of DFMEA, DVT/DQT, ORT, EMC, drop test, vibration test, thermal shock test, and reliability test.

In production stage, the product engineers co-work with process engineers to review the pilot run, semi-finished products quality control, process checking, finished product quality control, and the feedback analysis as well as the production problems occurred.
**Product Range**

**AC/DC**

**Enclosed Type**
- 100~1200W
- 3~55V
- 1U height
- -40~+70°C operating temp.
- 5 years warranty

**Series**
- NMP, RPS-C, MSP

**Page**
- 19-22

**External Adaptor**
- 6~220W
- 5~48V
- Level VI

**Series**
- GSM, GEM

**Page**
- 7-10

**Open Frame Type**
- 30~400W
- 3.3~48V
- 1~4 output
- MOPPx2 & BF rated

**Series**
- RPS, RPD, RPT, MPQ

**Page**
- 11-13

**On Board Type**
- 5~30W
- 3.3~48V
- PCB mount
- Small size
- MOPPx2 & BF rated
- -40~+85°C operating temp.

**Series**
- MPM, PM, MFM, NFM

**Page**
- 14-18

**DC/DC Converter**
- 1~2W
- 4.5~26.4V in
- 5~24V out
- SIP7 package
- Low leakage current<2μA
- 6KVdc I/O isolation

**Series**
- MDS, MDD

**Page**
- 23-24
The Difference between MOPP and MOOP in IEC 60601-1 3rd

In 2005, the International Electrotechnical Commission (IEC) published the third edition of medical safety standard (IEC60601-1: 2005), to replace the original second edition (IEC60601-1: 1998). The main difference between the 2nd edition and 3rd edition is the insulation level. The 2nd edition is divided into BI (Basic Isolation), SI (Supplementary Isolation), DI (Double Isolation) and RI (Reinforced Isolation), and the 3rd edition of new IEC60601-1 is divided into two categories of MOPP and MOOP.

The major impact of 3rd edition is the distinction made between operator and patient. As result, Means of Protection (MOP) was introduced and it is further categorized into 2 different classifications, which are Means of Patient Protection (MOPP) and Means of Operator Protection (MOOP).

It is the responsibility of the medical product manufacturer to determine the likelihood of a patient coming into contact, and decide whether patient protection (MOPP) or operator protection (MOOP) to use. If the medical devices come into contact with patients, they must meet the insulation requirements of MOPP.

In either case, the insulation between PRIMARY to SECONDARY must meet at least 2 x MOP and at least 1 x MOP between PRIMARY to protective earth (FG) at normal conditions. It is shown on Figure 1.

A power supplies that meet 2 x MOPP standards provide the highest level of protection. It can be advantageous to specify a 2 x MOPP power supply because it can cover most of medical applications.
AC/DC
External Adaptor

6~220W

Features

• Various styles:
  Desktop or wall-mounted, fixed or interchangeable input plug
• Output voltage from 5V to 48V available
• Class I & II models available
• ANSI/AAMI ES60601-1-11, EN60601-1-11 household medical regulations
• Medical safety approved (2xMOPP)
• Suitable for BF application with appropriate system consideration (except GSM40A~220A)

• Low leakage current <50~100μA
• No load power consumption <0.075~0.15W
• Energy efficiency Level VI
  (6W and 18~60W 5~9V for Level V)
• High operating temperature up to 70°C
• Other DC plug options are available
• Comply with EISA 2007/DoE, NRCan, AU/NZ MEPS, EU ErP and meet CoC version 5
• 3 years warranty
### Wall-mounted (Class II) — 6W

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM06□05-P1J</td>
<td>5V, 1.20A</td>
<td>68%</td>
</tr>
<tr>
<td>GSM06□06-P1J</td>
<td>6V, 1.00A</td>
<td>74%</td>
</tr>
<tr>
<td>GSM06□07-P1J</td>
<td>7.5V, 0.80A</td>
<td>74%</td>
</tr>
<tr>
<td>GSM06□09-P1J</td>
<td>9V, 0.66A</td>
<td>76%</td>
</tr>
<tr>
<td>GSM06□12-P1J</td>
<td>12V, 0.50A</td>
<td>77%</td>
</tr>
<tr>
<td>GSM06□15-P1J</td>
<td>15V, 0.40A</td>
<td>79%</td>
</tr>
<tr>
<td>GSM06□18-P1J</td>
<td>18V, 0.33A</td>
<td>80%</td>
</tr>
<tr>
<td>GSM06□24-P1J</td>
<td>24V, 0.25A</td>
<td>82%</td>
</tr>
</tbody>
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□ = U/E ; U: American 2P, E: European 2P

### Desktop/Wall-mounted (Class II) — 18W

<table>
<thead>
<tr>
<th>Order No.</th>
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<th>Effi.</th>
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<tbody>
<tr>
<td>GSM18□05-P1J</td>
<td>5V, 3.00A</td>
<td>80%</td>
</tr>
<tr>
<td>GSM18□07-P1J</td>
<td>7.5V, 2.00A</td>
<td>83%</td>
</tr>
<tr>
<td>GSM18□09-P1J</td>
<td>9V, 2.00A</td>
<td>84%</td>
</tr>
<tr>
<td>GSM18□12-P1J</td>
<td>12V, 1.50A</td>
<td>85%</td>
</tr>
<tr>
<td>GSM18□15-P1J</td>
<td>15V, 1.20A</td>
<td>85.5%</td>
</tr>
<tr>
<td>GSM18□18-P1J</td>
<td>18V, 1.00A</td>
<td>86%</td>
</tr>
<tr>
<td>GSM18□24-P1J</td>
<td>24V, 0.75A</td>
<td>87%</td>
</tr>
<tr>
<td>GSM18□48-P1J</td>
<td>48V, 0.375A</td>
<td>88%</td>
</tr>
</tbody>
</table>

□ =B/U/E ; B: IEC320-C8, U: American 2P, E: European 2P

### Desktop/Wall-mounted (Class II) — 25W

<table>
<thead>
<tr>
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<th>Output</th>
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</tr>
</thead>
<tbody>
<tr>
<td>GSM25□05-P1J</td>
<td>5V, 4.00A</td>
<td>80%</td>
</tr>
<tr>
<td>GSM25□07-P1J</td>
<td>7.5V, 2.93A</td>
<td>83%</td>
</tr>
<tr>
<td>GSM25□09-P1J</td>
<td>9V, 2.77A</td>
<td>84%</td>
</tr>
<tr>
<td>GSM25□12-P1J</td>
<td>12V, 2.08A</td>
<td>86%</td>
</tr>
<tr>
<td>GSM25□15-P1J</td>
<td>15V, 1.66A</td>
<td>86%</td>
</tr>
<tr>
<td>GSM25□18-P1J</td>
<td>18V, 1.38A</td>
<td>87%</td>
</tr>
<tr>
<td>GSM25□24-P1J</td>
<td>24V, 1.04A</td>
<td>87%</td>
</tr>
<tr>
<td>GSM25□48-P1J</td>
<td>48V, 0.52A</td>
<td>88%</td>
</tr>
</tbody>
</table>

□ =B/U/E ; B: IEC320-C8, U: American 2P, E: European 2P

### Desktop/Wall-mounted (Class II) — 36W

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM36□05-P1J</td>
<td>5V, 4.50A</td>
<td>80%</td>
</tr>
<tr>
<td>GSM36□07-P1J</td>
<td>7.5V, 4.32A</td>
<td>83%</td>
</tr>
<tr>
<td>GSM36□09-P1J</td>
<td>9V, 4.00A</td>
<td>84%</td>
</tr>
<tr>
<td>GSM36□12-P1J</td>
<td>12V, 3.00A</td>
<td>86%</td>
</tr>
<tr>
<td>GSM36□15-P1J</td>
<td>15V, 2.40A</td>
<td>87%</td>
</tr>
<tr>
<td>GSM36□18-P1J</td>
<td>18V, 2.00A</td>
<td>87%</td>
</tr>
<tr>
<td>GSM36□24-P1J</td>
<td>24V, 1.50A</td>
<td>87%</td>
</tr>
<tr>
<td>GSM36□48-P1J</td>
<td>48V, 0.75A</td>
<td>88%</td>
</tr>
</tbody>
</table>

□ =B/U/E ; B: IEC320-C8, U: American 2P, E: European 2P

### Optional DC Plug List

<table>
<thead>
<tr>
<th>Type</th>
<th>OD</th>
<th>ID</th>
<th>L</th>
<th>Type</th>
<th>OD</th>
<th>ID</th>
<th>L</th>
<th>Type</th>
<th>OD</th>
<th>ID</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>5.5</td>
<td>2.1</td>
<td>9.5</td>
<td>P1</td>
<td>5.5</td>
<td>2.1</td>
<td>9.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P11</td>
<td>5.5</td>
<td>2.1</td>
<td>11.0</td>
<td>P11</td>
<td>5.5</td>
<td>2.1</td>
<td>11.0</td>
<td>P11</td>
<td>5.5</td>
<td>2.5</td>
<td>9.5</td>
</tr>
<tr>
<td>P1L</td>
<td>5.5</td>
<td>2.5</td>
<td>11.0</td>
<td>P1L</td>
<td>5.5</td>
<td>2.5</td>
<td>11.0</td>
<td>P1M</td>
<td>5.5</td>
<td>2.5</td>
<td>11.0</td>
</tr>
</tbody>
</table>

Note1: Minimum order quantity is varied for different models.

Note2: Other options available by requests, please refer to specification for more detail.
## AC/DC External Adaptor 6~220W

### Desktop – 40W

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Output</th>
<th>Effi.</th>
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</thead>
<tbody>
<tr>
<td>GSM40□05-P1J</td>
<td>5V, 5.00A</td>
<td>81.0%</td>
</tr>
<tr>
<td>GSM40□07-P1J</td>
<td>7.5V, 5.34A</td>
<td>85.5%</td>
</tr>
<tr>
<td>GSM40□09-P1J</td>
<td>9V, 4.45A</td>
<td>86.0%</td>
</tr>
<tr>
<td>GSM40□12-P1J</td>
<td>12V, 3.34A</td>
<td>88.0%</td>
</tr>
<tr>
<td>GSM40□15-P1J</td>
<td>15V, 2.67A</td>
<td>88.5%</td>
</tr>
<tr>
<td>GSM40□18-P1J</td>
<td>18V, 2.22A</td>
<td>89.5%</td>
</tr>
<tr>
<td>GSM40□24-P1J</td>
<td>24V, 1.67A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM40□48-P1J</td>
<td>48V, 0.84A</td>
<td>91.0%</td>
</tr>
</tbody>
</table>

□=A/B ; A: IEC320-C14/Class I, B: IEC320-C8/Class II

### Desktop – 50W

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM50□12-P1J</td>
<td>12V, 6.67A</td>
<td>88.0%</td>
</tr>
<tr>
<td>GSM50□15-P1J</td>
<td>15V, 6.00A</td>
<td>89.0%</td>
</tr>
<tr>
<td>GSM50□19-P1J</td>
<td>19V, 4.74A</td>
<td>89.0%</td>
</tr>
<tr>
<td>GSM50□24-P1J</td>
<td>24V, 3.75A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM50□48-P1J</td>
<td>48V, 1.87A</td>
<td>91.0%</td>
</tr>
</tbody>
</table>

□=A/B ; A: IEC320-C14/Class I, B: IEC320-C8/Class II

### Desktop – 60W

<table>
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<tr>
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<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM60□05-P1J</td>
<td>5V, 6.00A</td>
<td>81.5%</td>
</tr>
<tr>
<td>GSM60□07-P1J</td>
<td>7.5V, 6.00A</td>
<td>86.0%</td>
</tr>
<tr>
<td>GSM60□09-P1J</td>
<td>9V, 6.00A</td>
<td>87.5%</td>
</tr>
<tr>
<td>GSM60□12-P1J</td>
<td>12V, 5.00A</td>
<td>88.0%</td>
</tr>
<tr>
<td>GSM60□15-P1J</td>
<td>15V, 4.00A</td>
<td>88.5%</td>
</tr>
<tr>
<td>GSM60□18-P1J</td>
<td>18V, 3.33A</td>
<td>89.0%</td>
</tr>
<tr>
<td>GSM60□24-P1J</td>
<td>24V, 2.50A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM60□48-P1J</td>
<td>48V, 1.25A</td>
<td>91.5%</td>
</tr>
</tbody>
</table>

□=A/B ; A: IEC320-C14/Class I, B: IEC320-C8/Class II

### Desktop – 90W

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM90□12-P1M</td>
<td>12V, 6.67A</td>
<td>88.0%</td>
</tr>
<tr>
<td>GSM90□15-P1M</td>
<td>15V, 6.00A</td>
<td>89.0%</td>
</tr>
<tr>
<td>GSM90□19-P1M</td>
<td>19V, 4.74A</td>
<td>89.0%</td>
</tr>
<tr>
<td>GSM90□24-P1M</td>
<td>24V, 3.75A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM90□48-P1M</td>
<td>48V, 1.87A</td>
<td>91.0%</td>
</tr>
</tbody>
</table>

□=A/B ; A: IEC320-C14/Class I, B: IEC320-C8/Class II

### Desktop – 120W

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Output</th>
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<tbody>
<tr>
<td>GSM120□12-R7B</td>
<td>12V, 8.5A</td>
<td>88.0%</td>
</tr>
<tr>
<td>GSM120□15-R7B</td>
<td>15V, 7.00A</td>
<td>89.0%</td>
</tr>
<tr>
<td>GSM120□20-R7B</td>
<td>20V, 6.00A</td>
<td>89.0%</td>
</tr>
<tr>
<td>GSM120□24-R7B</td>
<td>24V, 5.00A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM120□48-R7B</td>
<td>48V, 2.50A</td>
<td>91.5%</td>
</tr>
</tbody>
</table>

□=A/B ; A: IEC320-C14/Class I, B: IEC320-C8/Class II

### Desktop – 160W

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Output</th>
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</tr>
</thead>
<tbody>
<tr>
<td>GSM160□12-R7B</td>
<td>12V, 11.5A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM160□15-R7B</td>
<td>15V, 9.6A</td>
<td>91.0%</td>
</tr>
<tr>
<td>GSM160□20-R7B</td>
<td>20V, 8.0A</td>
<td>92.5%</td>
</tr>
<tr>
<td>GSM160□24-R7B</td>
<td>24V, 6.67A</td>
<td>93.0%</td>
</tr>
<tr>
<td>GSM160□48-R7B</td>
<td>48V, 3.34A</td>
<td>94.0%</td>
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</table>

□=A/B ; A: IEC320-C14/Class I, B: IEC320-C8/Class II

### Desktop – 200W

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<tbody>
<tr>
<td>GSM200□12-R7B</td>
<td>12V, 15.0A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM200□15-R7B</td>
<td>15V, 13.4A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM200□20-R7B</td>
<td>20V, 11.0A</td>
<td>92.0%</td>
</tr>
<tr>
<td>GSM200□24-R7B</td>
<td>24V, 9.20A</td>
<td>93.5%</td>
</tr>
<tr>
<td>GSM200□48-R7B</td>
<td>48V, 4.60A</td>
<td>94.5%</td>
</tr>
</tbody>
</table>

□=A/B ; A: IEC320-C14/Class I, B: IEC320-C8/Class II

### Desktop – 220W

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<tbody>
<tr>
<td>GSM220□12-R7B</td>
<td>12V, 15.0A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM220□15-R7B</td>
<td>15V, 13.4A</td>
<td>90.0%</td>
</tr>
<tr>
<td>GSM220□20-R7B</td>
<td>20V, 11.0A</td>
<td>92.0%</td>
</tr>
<tr>
<td>GSM220□24-R7B</td>
<td>24V, 9.20A</td>
<td>93.5%</td>
</tr>
<tr>
<td>GSM220□48-R7B</td>
<td>48V, 4.60A</td>
<td>94.5%</td>
</tr>
</tbody>
</table>

□=A/B ; A: IEC320-C14/Class I, B: IEC320-C8/Class II

### Medical / Hospital Grade AC Power Cord

Order No.: YP18+YC12
### Wall-mounted (Interchangeable Type/Class II) — 12W

<table>
<thead>
<tr>
<th>Order No. (main body)</th>
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<tbody>
<tr>
<td>GEM12I05-USB</td>
<td>5V, 2.40A</td>
<td>80%</td>
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<td>GEM12I05-P1J</td>
<td>5V, 2.40A</td>
<td>80%</td>
</tr>
<tr>
<td>GEM12I07-P1J</td>
<td>7.5V, 1.60A</td>
<td>82%</td>
</tr>
<tr>
<td>GEM12I09-P1J</td>
<td>9V, 1.33A</td>
<td>82%</td>
</tr>
<tr>
<td>GEM12I12-P1J</td>
<td>12V, 1.00A</td>
<td>82.5%</td>
</tr>
<tr>
<td>GEM12I15-P1J</td>
<td>15V, 0.80A</td>
<td>84%</td>
</tr>
<tr>
<td>GEM12I18-P1J</td>
<td>18V, 0.66A</td>
<td>85%</td>
</tr>
<tr>
<td>GEM12I24-P1J</td>
<td>24V, 0.50A</td>
<td>85%</td>
</tr>
<tr>
<td>GEM12I48-P1J</td>
<td>48V, 0.25A</td>
<td>87%</td>
</tr>
</tbody>
</table>

### Wall-mounted (Interchangeable Type/Class II) — 18W

<table>
<thead>
<tr>
<th>Order No. (main body)</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEM18I05-P1J</td>
<td>5V, 3.00A</td>
<td>80%</td>
</tr>
<tr>
<td>GEM18I09-P1J</td>
<td>9V, 2.00A</td>
<td>84%</td>
</tr>
<tr>
<td>GEM18I12-P1J</td>
<td>12V, 1.50A</td>
<td>84%</td>
</tr>
<tr>
<td>GEM18I15-P1J</td>
<td>15V, 1.20A</td>
<td>84%</td>
</tr>
<tr>
<td>GEM18I18-P1J</td>
<td>18V, 1.00A</td>
<td>84%</td>
</tr>
<tr>
<td>GEM18I24-P1J</td>
<td>24V, 0.75A</td>
<td>85%</td>
</tr>
<tr>
<td>GEM18I48-P1J</td>
<td>48V, 0.38A</td>
<td>87%</td>
</tr>
</tbody>
</table>

### Wall-mounted (Interchangeable Type/Class II) — 30W

<table>
<thead>
<tr>
<th>Order No. (main body)</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEM30I05-P1J</td>
<td>5V, 4.00A</td>
<td>82%</td>
</tr>
<tr>
<td>GEM30I07-P1J</td>
<td>7.5V, 3.33A</td>
<td>86%</td>
</tr>
<tr>
<td>GEM30I09-P1J</td>
<td>9V, 3.33A</td>
<td>87%</td>
</tr>
<tr>
<td>GEM30I12-P1J</td>
<td>12V, 2.50A</td>
<td>87%</td>
</tr>
<tr>
<td>GEM30I15-P1J</td>
<td>15V, 2.00A</td>
<td>87%</td>
</tr>
<tr>
<td>GEM30I18-P1J</td>
<td>18V, 1.66A</td>
<td>88%</td>
</tr>
<tr>
<td>GEM30I24-P1J</td>
<td>24V, 1.25A</td>
<td>88.5%</td>
</tr>
<tr>
<td>GEM30I48-P1J</td>
<td>48V, 0.625A</td>
<td>90%</td>
</tr>
</tbody>
</table>

### Wall-mounted (Interchangeable Type/Class II) — 40W

<table>
<thead>
<tr>
<th>Order No. (main body)</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEM40I05-P1J</td>
<td>5V, 5.00A</td>
<td>84%</td>
</tr>
<tr>
<td>GEM40I09-P1J</td>
<td>9V, 4.00A</td>
<td>87%</td>
</tr>
<tr>
<td>GEM40I12-P1J</td>
<td>12V, 3.33A</td>
<td>88%</td>
</tr>
<tr>
<td>GEM40I15-P1J</td>
<td>15V, 2.66A</td>
<td>88%</td>
</tr>
<tr>
<td>GEM40I18-P1J</td>
<td>18V, 2.22A</td>
<td>88%</td>
</tr>
<tr>
<td>GEM40I24-P1J</td>
<td>24V, 1.66A</td>
<td>89%</td>
</tr>
<tr>
<td>GEM40I48-P1J</td>
<td>48V, 0.83A</td>
<td>90.5%</td>
</tr>
</tbody>
</table>

### Interchangeable AC Plug Specifically for GEM Series

<table>
<thead>
<tr>
<th>AC Plug Type</th>
<th>Mixed Four Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Plug-AU2</td>
<td>AC Plug-UK2</td>
</tr>
<tr>
<td>AC Plug-EU2</td>
<td>AC Plug-US2</td>
</tr>
<tr>
<td>AC Plug-Mix2</td>
<td></td>
</tr>
</tbody>
</table>

- **Australian Type**
- **U.K. Type**
- **European Type**
- **U.S. Type**

**Note:** Main body unit and AC plug should be ordered separately; The main body needs to be used along with any of the AC plug.
AC/DC
Open Frame Type
30~400W

Features
- Complete size for choice: 3”x2”, 4”x2”, 5”x3”, 7”x4.2”
- Single and multiple outputs
- Medical safety approved (2xMOPP)
- Suitable for BF application with appropriate system consideration (except RPS/D/T-75)
- Class I & II models available
- Low leakage current<100~300μA
- No load power consumption<0.1~0.75W
- Remote ON/OFF, remote sense, 5V standby output, 12V auxiliary output, P.G./P.F. signal for selected models
- 3 years warranty
### 30W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Rated/Peak)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-30-3.3</td>
<td>3.3V, 6A / 6.60A</td>
<td>80.0%</td>
</tr>
<tr>
<td>RPS-30-5</td>
<td>5V, 6A / 6.60A</td>
<td>82.0%</td>
</tr>
<tr>
<td>RPS-30-7.5</td>
<td>7.5V, 4A / 4.40A</td>
<td>84.0%</td>
</tr>
<tr>
<td>RPS-30-12</td>
<td>12V, 2.5A / 2.75A</td>
<td>88.0%</td>
</tr>
<tr>
<td>RPS-30-15</td>
<td>15V, 2A / 2.20A</td>
<td>89.0%</td>
</tr>
<tr>
<td>RPS-30-24</td>
<td>24V, 1.25A / 1.375A</td>
<td>89.5%</td>
</tr>
<tr>
<td>RPS-30-48</td>
<td>48V, 0.625A / 0.687A</td>
<td>92.0%</td>
</tr>
</tbody>
</table>

### 45W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Rated/Peak)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-45-3.3</td>
<td>3.3V, 8A / 8.80A</td>
<td>80.5%</td>
</tr>
<tr>
<td>RPS-45-5</td>
<td>5V, 8A / 8.80A</td>
<td>83.0%</td>
</tr>
<tr>
<td>RPS-45-7.5</td>
<td>7.5V, 5.4A / 5.95A</td>
<td>85.0%</td>
</tr>
<tr>
<td>RPS-45-12</td>
<td>12V, 3.8A / 4.18A</td>
<td>88.0%</td>
</tr>
<tr>
<td>RPS-45-15</td>
<td>15V, 3A / 3.30A</td>
<td>89.0%</td>
</tr>
<tr>
<td>RPS-45-24</td>
<td>24V, 1.9A / 2.10A</td>
<td>90.0%</td>
</tr>
<tr>
<td>RPS-45-48</td>
<td>48V, 0.94A / 1.03A</td>
<td>91.0%</td>
</tr>
</tbody>
</table>

### 60W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Rated/Peak)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-60-3.3</td>
<td>3.3V, 10A / 11A</td>
<td>80.0%</td>
</tr>
<tr>
<td>RPS-60-5</td>
<td>5V, 10A / 11A</td>
<td>84.0%</td>
</tr>
<tr>
<td>RPS-60-7.5</td>
<td>7.5V, 8A / 8.80A</td>
<td>85.0%</td>
</tr>
<tr>
<td>RPS-60-12</td>
<td>12V, 5.42A / 5.96A</td>
<td>88.0%</td>
</tr>
<tr>
<td>RPS-60-15</td>
<td>15V, 4.34A / 4.77A</td>
<td>89.0%</td>
</tr>
<tr>
<td>RPS-60-24</td>
<td>24V, 2.71A / 2.98A</td>
<td>90.0%</td>
</tr>
<tr>
<td>RPS-60-48</td>
<td>48V, 1.36A / 1.49A</td>
<td>91.0%</td>
</tr>
</tbody>
</table>

### 60W: Single Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Rated/Peak)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-60-3.3</td>
<td>3.3V, 10A / 11A</td>
<td>74.0%</td>
</tr>
<tr>
<td>RPS-60-5</td>
<td>5V, 10A / 11A</td>
<td>79.0%</td>
</tr>
<tr>
<td>RPS-60-12</td>
<td>12V, 5A / 5.5A</td>
<td>83.0%</td>
</tr>
<tr>
<td>RPS-60-15</td>
<td>15V, 4A / 4.4A</td>
<td>84.0%</td>
</tr>
<tr>
<td>RPS-60-24</td>
<td>24V, 2.5A / 2.75A</td>
<td>85.0%</td>
</tr>
<tr>
<td>RPS-60-48</td>
<td>48V, 1.25A / 1.375A</td>
<td>86.0%</td>
</tr>
</tbody>
</table>

### 60W: Dual Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPD-60A</td>
<td>5V, 0.5~5.5A</td>
<td>78%</td>
<td>54W</td>
</tr>
<tr>
<td>RPD-60B</td>
<td>5V, 0.5~3.85A</td>
<td>82%</td>
<td>59W</td>
</tr>
</tbody>
</table>

### 60W: Triple Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPT-60A</td>
<td>5V, 0.5~4.4A</td>
<td>77%</td>
<td>51W</td>
</tr>
<tr>
<td>RPT-60B</td>
<td>5V, 0.5~4.4A</td>
<td>78%</td>
<td>55W</td>
</tr>
<tr>
<td>RPT-60C</td>
<td>5V, 0.5~4.4A</td>
<td>79%</td>
<td>55W</td>
</tr>
<tr>
<td>RPT-60D</td>
<td>5V, 0.5~3.85A</td>
<td>79%</td>
<td>52W</td>
</tr>
<tr>
<td>RPT-6003</td>
<td>3.3V, 0.5~5.5A</td>
<td>75%</td>
<td>44W</td>
</tr>
</tbody>
</table>

### 120W: Single Output — Class I or II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Convection/10CFM)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-120-12</td>
<td>12V, 7A / 10A</td>
<td>89.0%</td>
</tr>
<tr>
<td>RPS-120-15</td>
<td>15V, 5.6A / 8A</td>
<td>89.0%</td>
</tr>
<tr>
<td>RPS-120-24</td>
<td>24V, 3.5A / 5A</td>
<td>90.0%</td>
</tr>
<tr>
<td>RPS-120-27</td>
<td>27V, 3.15A / 4.5A</td>
<td>90.0%</td>
</tr>
<tr>
<td>RPS-120-48</td>
<td>48V, 1.75A / 2.5A</td>
<td>91.0%</td>
</tr>
</tbody>
</table>

### 200W: Single Output — Class I or II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Convection/10CFM)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-200-12</td>
<td>12V, 11.7A / 16.7A</td>
<td>93.0%</td>
</tr>
<tr>
<td>RPS-200-15</td>
<td>15V, 9.4A / 13.4A</td>
<td>93.5%</td>
</tr>
<tr>
<td>RPS-200-24</td>
<td>24V, 5.9A / 8.4A</td>
<td>94.0%</td>
</tr>
<tr>
<td>RPS-200-27</td>
<td>27V, 5.3A / 7.5A</td>
<td>94.0%</td>
</tr>
<tr>
<td>RPS-200-48</td>
<td>48V, 3A / 4.2A</td>
<td>95.0%</td>
</tr>
</tbody>
</table>
### 75W: Single Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Rated/23.5CFM)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-75-3.3</td>
<td>3.3V, 15A / 20A</td>
<td>73%</td>
</tr>
<tr>
<td>RPS-75-5</td>
<td>5V, 14A / 18.7A</td>
<td>78%</td>
</tr>
<tr>
<td>RPS-75-12</td>
<td>12V, 6.3A / 8.3A</td>
<td>82%</td>
</tr>
<tr>
<td>RPS-75-15</td>
<td>15V, 5A / 6.7A</td>
<td>83%</td>
</tr>
<tr>
<td>RPS-75-24</td>
<td>24V, 3.2A / 4.2A</td>
<td>85%</td>
</tr>
<tr>
<td>RPS-75-36</td>
<td>36V, 2.1A / 2.8A</td>
<td>86%</td>
</tr>
<tr>
<td>RPS-75-48</td>
<td>48V, 1.6A / 2.1A</td>
<td>86%</td>
</tr>
</tbody>
</table>

### 75W: Dual Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPD-75A</td>
<td>5V, 1.0~9.5A</td>
<td>77%</td>
<td>96W</td>
</tr>
<tr>
<td>RPD-75B</td>
<td>5V, 1.0~6.8A</td>
<td>79%</td>
<td>99W</td>
</tr>
</tbody>
</table>

### 75W: Triple Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPT-75A</td>
<td>5V, 0.6~8.0A</td>
<td>76%</td>
<td>93W</td>
</tr>
<tr>
<td></td>
<td>12V, 0.2~4.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-5V, 0.1~1.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPT-75B</td>
<td>5V, 0.6~8.0A</td>
<td>77%</td>
<td>100W</td>
</tr>
<tr>
<td></td>
<td>12V, 0.2~4.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-12V, 0.1~1.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPT-75C</td>
<td>5V, 0.6~8.0A</td>
<td>77%</td>
<td>100W</td>
</tr>
<tr>
<td></td>
<td>15V, 0.1~3.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-15V, 0.1~1.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPT-75D</td>
<td>5V, 0.6~7.0A</td>
<td>79%</td>
<td>95W</td>
</tr>
<tr>
<td></td>
<td>24V, 0.1~2.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12V, 0.1~1.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPT-7503</td>
<td>3.3V, 0.7~7.0A</td>
<td>74%</td>
<td>81W</td>
</tr>
<tr>
<td></td>
<td>5V, 0.0~8.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12V, 0.0~1.5A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 160W: Single Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Convection/20.5CFM)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS□-160-5</td>
<td>5V, 20A / 30A</td>
<td>86%</td>
</tr>
<tr>
<td>RPS□-160-12</td>
<td>12V, 9.1A / 12.9A</td>
<td>87%</td>
</tr>
<tr>
<td>RPS□-160-15</td>
<td>15V, 7.3A / 10.3A</td>
<td>87%</td>
</tr>
<tr>
<td>RPS□-160-24</td>
<td>24V, 4.6A / 6.5A</td>
<td>87%</td>
</tr>
<tr>
<td>RPS□-160-48</td>
<td>48V, 2.3A / 3.25A</td>
<td>88%</td>
</tr>
</tbody>
</table>

### 160W: Triple Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPT□-160A</td>
<td>5V, 0.6~14A</td>
<td>84%</td>
<td>145W</td>
</tr>
<tr>
<td></td>
<td>12V, 0.2~5.5A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-5V, 0.1~1.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPT□-160B</td>
<td>5V, 0.6~14A</td>
<td>84%</td>
<td>146W</td>
</tr>
<tr>
<td></td>
<td>12V, 0.2~5.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-12V, 0.1~1.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPT□-160C</td>
<td>5V, 0.6~14A</td>
<td>83%</td>
<td>143W</td>
</tr>
<tr>
<td></td>
<td>15V, 0.1~3.6A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-15V, 0.1~1.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPT□-160D</td>
<td>5V, 0.3~11A</td>
<td>83%</td>
<td>148W</td>
</tr>
<tr>
<td></td>
<td>12V, 0.2~5.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24V, 0.15~1.2A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 200W: Quad Output – Class I

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MPQ-200B</td>
<td>5V, 3.0~18A</td>
<td>78%</td>
<td>193W</td>
</tr>
<tr>
<td></td>
<td>12V, 0.7~8.4A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-5V, 0.0~2.4A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-12V, 0.0~2.4A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPQ-200C</td>
<td>5V, 3.0~18A</td>
<td>78%</td>
<td>190W</td>
</tr>
<tr>
<td></td>
<td>15V, 0.5~6.0A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-5V, 0.0~2.4A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-15V, 0.0~2.4A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPQ-200D</td>
<td>5V, 3.0~18A</td>
<td>79%</td>
<td>195W</td>
</tr>
<tr>
<td></td>
<td>24V, 0.3~3.3A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12V, 0.0~2.4A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-12V, 0.0~2.4A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPQ-200F</td>
<td>5V, 3.0~18A</td>
<td>81%</td>
<td>200W</td>
</tr>
<tr>
<td></td>
<td>24V, 0.3~3.3A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15V, 0.0~2.4A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-15V, 0.0~2.4A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
AC/DC On Board Type

5~30W

Features

- Small PCB mount models
- Output voltage from 3.3V to 48V available
- Medical safety approved (2xMOPP)
- Suitable for BF application with appropriate system consideration
- Class II power unit (class I for PM/NFM-20)
- Low leakage current < 80~300μA
- No load power consumption < 0.075~0.75W
- -40~+85°C operating temperature (MPM/MFM series)
- 3 years warranty
AC/DC On Board Type  5~30W

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPM-05-3.3</td>
<td>3.3V, 1.25A / 1.38A</td>
<td>74%</td>
</tr>
<tr>
<td>MPM-05-5</td>
<td>5V, 1.00A / 1.10A</td>
<td>80%</td>
</tr>
<tr>
<td>MPM-05-12</td>
<td>12V, 0.42A / 0.46A</td>
<td>80%</td>
</tr>
<tr>
<td>MPM-05-15</td>
<td>15V, 0.33A / 0.36A</td>
<td>81%</td>
</tr>
<tr>
<td>MPM-05-24</td>
<td>24V, 0.23A / 0.25A</td>
<td>82%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPM-10-3.3</td>
<td>3.3V, 2.50A / 2.75A</td>
<td>78%</td>
</tr>
<tr>
<td>MPM-10-5</td>
<td>5V, 2.00A / 2.20A</td>
<td>81%</td>
</tr>
<tr>
<td>MPM-10-12</td>
<td>12V, 0.85A / 0.94A</td>
<td>83%</td>
</tr>
<tr>
<td>MPM-10-15</td>
<td>15V, 0.67A / 0.74A</td>
<td>83%</td>
</tr>
<tr>
<td>MPM-10-24</td>
<td>24V, 0.42A / 0.46A</td>
<td>84%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPM-15-3.3</td>
<td>3.3V, 3.50A / 3.85A</td>
<td>83.5%</td>
</tr>
<tr>
<td>MPM-15-5</td>
<td>5V, 3.00A / 3.30A</td>
<td>85.5%</td>
</tr>
<tr>
<td>MPM-15-12</td>
<td>12V, 1.25A / 1.38A</td>
<td>86.5%</td>
</tr>
<tr>
<td>MPM-15-15</td>
<td>15V, 1.00A / 1.10A</td>
<td>87%</td>
</tr>
<tr>
<td>MPM-15-24</td>
<td>24V, 0.63A / 0.69A</td>
<td>86.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPM-20-3.3</td>
<td>3.3V, 4.50A / 4.95A</td>
<td>81%</td>
</tr>
<tr>
<td>MPM-20-5</td>
<td>5V, 4.00A / 4.40A</td>
<td>85%</td>
</tr>
<tr>
<td>MPM-20-12</td>
<td>12V, 1.80A / 1.98A</td>
<td>85.5%</td>
</tr>
<tr>
<td>MPM-20-15</td>
<td>15V, 1.40A / 1.54A</td>
<td>87%</td>
</tr>
<tr>
<td>MPM-20-24</td>
<td>24V, 0.90A / 0.99A</td>
<td>87%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPM-30-3.3</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>MPM-30-5</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>MPM-30-12</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>MPM-30-15</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>MPM-30-24</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>MPM-30-48</td>
<td>□</td>
<td></td>
</tr>
</tbody>
</table>

|= blank, ST; Blank: PCB mounting, ST: Screw terminal style

MPM Series & PM Series Comparison

<table>
<thead>
<tr>
<th>Series</th>
<th>Difference</th>
<th>AC Input Voltage</th>
<th>No load</th>
<th>Leakage Current</th>
<th>Working Temperature</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPM</td>
<td>&lt;80~264VAC</td>
<td>&lt;0.075W</td>
<td>&lt;80μA</td>
<td>-40~ +85°C</td>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>PM</td>
<td>&lt;85~264VAC</td>
<td>&lt;0.5~0.75W by model</td>
<td>&lt;80~300μA by model</td>
<td>-20~ +70°C</td>
<td>Large</td>
<td></td>
</tr>
</tbody>
</table>
### Mechanical Specification for PM Series

#### PM-05 / 10 / 15 Series

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-05-3.3</td>
<td>3.3V, 1.25A</td>
<td>67%</td>
</tr>
<tr>
<td>PM-05-5</td>
<td>5V, 1.00A</td>
<td>71%</td>
</tr>
<tr>
<td>PM-05-12</td>
<td>12V, 0.42A</td>
<td>73%</td>
</tr>
<tr>
<td>PM-05-15</td>
<td>15V, 0.33A</td>
<td>74%</td>
</tr>
<tr>
<td>PM-05-24</td>
<td>24V, 0.23A</td>
<td>76%</td>
</tr>
</tbody>
</table>

#### 15W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-15-3.3</td>
<td>3.3V, 3.50A</td>
<td>73%</td>
</tr>
<tr>
<td>PM-15-5</td>
<td>5V, 3.00A</td>
<td>76%</td>
</tr>
<tr>
<td>PM-15-12</td>
<td>12V, 1.25A</td>
<td>78%</td>
</tr>
<tr>
<td>PM-15-15</td>
<td>15V, 1.00A</td>
<td>79%</td>
</tr>
<tr>
<td>PM-15-24</td>
<td>24V, 0.63A</td>
<td>81%</td>
</tr>
</tbody>
</table>

#### 10W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-10-3.3</td>
<td>3.3V, 2.50A</td>
<td>66%</td>
</tr>
<tr>
<td>PM-10-5</td>
<td>5V, 2.00A</td>
<td>74%</td>
</tr>
<tr>
<td>PM-10-12</td>
<td>12V, 0.85A</td>
<td>78%</td>
</tr>
<tr>
<td>PM-10-15</td>
<td>15V, 0.67A</td>
<td>79%</td>
</tr>
<tr>
<td>PM-10-24</td>
<td>24V, 0.42A</td>
<td>79%</td>
</tr>
</tbody>
</table>

#### 20W: Single Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-20-3.3</td>
<td>3.3V, 4.50A</td>
<td>71%</td>
</tr>
<tr>
<td>PM-20-5</td>
<td>5V, 4.40A</td>
<td>75%</td>
</tr>
<tr>
<td>PM-20-12</td>
<td>12V, 1.80A</td>
<td>81%</td>
</tr>
<tr>
<td>PM-20-15</td>
<td>15V, 1.40A</td>
<td>83%</td>
</tr>
<tr>
<td>PM-20-24</td>
<td>24V, 0.92A</td>
<td>84%</td>
</tr>
</tbody>
</table>
### AC/DC On Board Type 5~30W

#### MFM Series & NMP Series Comparison

<table>
<thead>
<tr>
<th>Difference</th>
<th>AC Input Voltage</th>
<th>No load</th>
<th>Leakage Current</th>
<th>Working Temperature</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFM</td>
<td>80~264VAC</td>
<td>&lt;0.075W</td>
<td>&lt;80μA</td>
<td>-40~+85°C</td>
<td>Small</td>
</tr>
<tr>
<td>NFM</td>
<td>85~264VAC</td>
<td>&lt;0.5~0.75W by model</td>
<td>&lt;80~300μA by model</td>
<td>-20~+70°C</td>
<td>Large</td>
</tr>
</tbody>
</table>

#### 5W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFM-05-3.3</td>
<td>3.3V, 1.25A / 1.38A</td>
<td>74%</td>
</tr>
<tr>
<td>MFM-05-5</td>
<td>5V, 1.00A / 1.10A</td>
<td>80%</td>
</tr>
<tr>
<td>MFM-05-12</td>
<td>12V, 0.42A / 0.46A</td>
<td>80%</td>
</tr>
<tr>
<td>MFM-05-15</td>
<td>15V, 0.33A / 0.36A</td>
<td>81%</td>
</tr>
<tr>
<td>MFM-05-24</td>
<td>24V, 0.23A / 0.25A</td>
<td>82%</td>
</tr>
</tbody>
</table>

#### 10W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFM-10-3.3</td>
<td>3.3V, 2.50A / 2.75A</td>
<td>78%</td>
</tr>
<tr>
<td>MFM-10-5</td>
<td>5V, 2.00A / 2.20A</td>
<td>81%</td>
</tr>
<tr>
<td>MFM-10-12</td>
<td>12V, 0.85A / 0.94A</td>
<td>83%</td>
</tr>
<tr>
<td>MFM-10-15</td>
<td>15V, 0.67A / 0.74A</td>
<td>83%</td>
</tr>
<tr>
<td>MFM-10-24</td>
<td>24V, 0.42A / 0.46A</td>
<td>84%</td>
</tr>
</tbody>
</table>

#### 15W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFM-15-3.3</td>
<td>3.3V, 3.50A / 3.85A</td>
<td>83.5%</td>
</tr>
<tr>
<td>MFM-15-5</td>
<td>5V, 3.00A / 3.30A</td>
<td>85.5%</td>
</tr>
<tr>
<td>MFM-15-12</td>
<td>12V, 1.25A / 1.38A</td>
<td>86.5%</td>
</tr>
<tr>
<td>MFM-15-15</td>
<td>15V, 1.00A / 1.10A</td>
<td>87.0%</td>
</tr>
<tr>
<td>MFM-15-24</td>
<td>24V, 0.63A / 0.69A</td>
<td>86.5%</td>
</tr>
</tbody>
</table>

#### 20W: Single Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFM-20-3.3</td>
<td>3.3V, 4.50A / 4.95A</td>
<td>81%</td>
</tr>
<tr>
<td>MFM-20-5</td>
<td>5V, 4.00A / 4.40A</td>
<td>85%</td>
</tr>
<tr>
<td>MFM-20-12</td>
<td>12V, 1.80A / 1.98A</td>
<td>85.5%</td>
</tr>
<tr>
<td>MFM-20-15</td>
<td>15V, 1.40A / 1.54A</td>
<td>87%</td>
</tr>
<tr>
<td>MFM-20-24</td>
<td>24V, 0.90A / 0.99A</td>
<td>87%</td>
</tr>
</tbody>
</table>

#### 30W: Single Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output / Peak(10 sec.)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFM-30-3.3</td>
<td>3.3V, 6.00A / 7.8A</td>
<td>82.5%</td>
</tr>
<tr>
<td>MFM-30-5</td>
<td>5V, 6.00A / 6.9A</td>
<td>86.5%</td>
</tr>
<tr>
<td>MFM-30-12</td>
<td>12V, 2.50A / 2.9A</td>
<td>90%</td>
</tr>
<tr>
<td>MFM-30-15</td>
<td>15V, 2.00A / 2.3A</td>
<td>89%</td>
</tr>
<tr>
<td>MFM-30-24</td>
<td>24V, 1.30A / 1.5A</td>
<td>90%</td>
</tr>
<tr>
<td>MFM-30-48</td>
<td>48V, 0.63A / 0.73A</td>
<td>91%</td>
</tr>
</tbody>
</table>
### 5W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFM-05-3.3</td>
<td>3.3V, 1.25A</td>
<td>67%</td>
</tr>
<tr>
<td>NFM-05-5</td>
<td>5V, 1.00A</td>
<td>71%</td>
</tr>
<tr>
<td>NFM-05-12</td>
<td>12V, 0.42A</td>
<td>73%</td>
</tr>
<tr>
<td>NFM-05-15</td>
<td>15V, 0.33A</td>
<td>74%</td>
</tr>
<tr>
<td>NFM-05-24</td>
<td>24V, 0.23A</td>
<td>76%</td>
</tr>
</tbody>
</table>

### 10W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFM-10-3.3</td>
<td>3.3V, 2.50A</td>
<td>66%</td>
</tr>
<tr>
<td>NFM-10-5</td>
<td>5V, 2.00A</td>
<td>74%</td>
</tr>
<tr>
<td>NFM-10-12</td>
<td>12V, 0.85A</td>
<td>78%</td>
</tr>
<tr>
<td>NFM-10-15</td>
<td>15V, 0.67A</td>
<td>79%</td>
</tr>
<tr>
<td>NFM-10-24</td>
<td>24V, 0.42A</td>
<td>79%</td>
</tr>
</tbody>
</table>

### 15W: Single Output — Class II

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFM-15-3.3</td>
<td>3.3V, 3.50A</td>
<td>73%</td>
</tr>
<tr>
<td>NFM-15-5</td>
<td>5V, 3.00A</td>
<td>76%</td>
</tr>
<tr>
<td>NFM-15-12</td>
<td>12V, 1.25A</td>
<td>78%</td>
</tr>
<tr>
<td>NFM-15-15</td>
<td>15V, 1.00A</td>
<td>79%</td>
</tr>
<tr>
<td>NFM-15-24</td>
<td>24V, 0.63A</td>
<td>81%</td>
</tr>
</tbody>
</table>

### 20W: Single Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFM-20-3.3</td>
<td>3.3V, 4.50A</td>
<td>71%</td>
</tr>
<tr>
<td>NFM-20-5</td>
<td>5V, 4.40A</td>
<td>75%</td>
</tr>
<tr>
<td>NFM-20-12</td>
<td>12V, 1.80A</td>
<td>81%</td>
</tr>
<tr>
<td>NFM-20-15</td>
<td>15V, 1.40A</td>
<td>83%</td>
</tr>
<tr>
<td>NFM-20-24</td>
<td>24V, 0.92A</td>
<td>84%</td>
</tr>
</tbody>
</table>

### Mechanical Specification for NFM Series

#### NFM-05/10/15 Series

<table>
<thead>
<tr>
<th>5W</th>
<th>10W</th>
<th>15W</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.77&quot; (45mm)</td>
<td>1.77&quot; (45mm)</td>
</tr>
<tr>
<td>B</td>
<td>0.89&quot; (22.5mm)</td>
<td>0.89&quot; (22.5mm)</td>
</tr>
<tr>
<td>C</td>
<td>0.21&quot; (5.3mm)</td>
<td>0.22&quot; (5.5mm)</td>
</tr>
<tr>
<td>D</td>
<td>1.85&quot; (47mm)</td>
<td>2.13&quot; (54mm)</td>
</tr>
<tr>
<td>E</td>
<td>2.28&quot; (57.9mm)</td>
<td>2.56&quot; (65mm)</td>
</tr>
<tr>
<td>F</td>
<td>0.49&quot; (12.47mm)</td>
<td>0.49&quot; (12.47mm)</td>
</tr>
<tr>
<td>G</td>
<td>0.789&quot; (20.04mm)</td>
<td>0.789&quot; (20.04mm)</td>
</tr>
<tr>
<td>H</td>
<td>0.196&quot; (5mm)</td>
<td>0.196&quot; (5mm)</td>
</tr>
<tr>
<td>I</td>
<td>0.75&quot; (19.1mm)</td>
<td>0.87&quot; (22mm)</td>
</tr>
</tbody>
</table>

#### NFM-20 Series

<table>
<thead>
<tr>
<th>5W</th>
<th>10W</th>
<th>15W</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.26&quot; (6.56mm)</td>
<td>0.26&quot; (6.56mm)</td>
</tr>
<tr>
<td>B</td>
<td>0.56&quot; (14.2mm)</td>
<td>0.56&quot; (14.2mm)</td>
</tr>
<tr>
<td>C</td>
<td>0.75&quot; (19.1mm)</td>
<td>0.87&quot; (22mm)</td>
</tr>
<tr>
<td>D</td>
<td>1.77&quot; (45mm)</td>
<td>1.77&quot; (45mm)</td>
</tr>
<tr>
<td>E</td>
<td>2.28&quot; (57.9mm)</td>
<td>2.56&quot; (65mm)</td>
</tr>
<tr>
<td>F</td>
<td>0.49&quot; (12.47mm)</td>
<td>0.49&quot; (12.47mm)</td>
</tr>
<tr>
<td>G</td>
<td>0.789&quot; (20.04mm)</td>
<td>0.789&quot; (20.04mm)</td>
</tr>
<tr>
<td>H</td>
<td>0.196&quot; (5mm)</td>
<td>0.196&quot; (5mm)</td>
</tr>
<tr>
<td>I</td>
<td>0.75&quot; (19.1mm)</td>
<td>0.87&quot; (22mm)</td>
</tr>
</tbody>
</table>
AC/DC
Enclosed Type

100~1200W

Features

- Medical safety approved
  (2xMOPP for NMP/RPS-C series, MOOP level for MSP series)
- Suitable for BF application with appropriate system
  consideration (NMP/RPS-C series)
- Output voltage from 3V to 55V available
- Class I power unit
- 1U low profile (except for MSP-600/1000)
- Low leakage current <100~450μA
- No load power consumption <0.3~0.8W
- Built-in remote ON/OFF, remote sense, current sharing, 5V standby output, 12V auxiliary output, DC OK signal for selected models
- -40~+70°C wide operating temperature
- 5 years warranty for NMP/MSP series
  3 years warranty for RPS-C series
NMP Series SPEC  
NMP Short Form

NMP Introduction

AC/DC Enclosed Type  100~1200W  
(Configurable Modular Type  650~1200W)

NMP650  
250x 89x 41mm

NMP1K2  
250x 127x 41mm

Output Configuration Guide

NMP  
SLOT 1  SLOT 2  SLOT 3  SLOT 4  SLOT 5  SLOT 6

650/1K2(650W/1200W)  
Parallel or option code

For NMP1K2 only

MS-240 : 1-SLOT isolated single output (240W max.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>5V, 0~36A</td>
<td>3~6V</td>
<td>±2%</td>
<td>100mV</td>
<td>180W</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>12V, 0~20A</td>
<td>6~15V</td>
<td>±1%</td>
<td>150mV</td>
<td>240W</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>24V, 0~10A</td>
<td>15~30V</td>
<td>±1%</td>
<td>150mV</td>
<td>240W</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>48V, 0~5A</td>
<td>30~55V</td>
<td>±1%</td>
<td>250mV</td>
<td>240W</td>
<td></td>
</tr>
</tbody>
</table>

Telecommunication  
X-ray and Image Diagnostic Machine  
Automation Robot Arms
### 120W: Single Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Convection/10CFM)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-120-12-C</td>
<td>12V, 7A / 10A</td>
<td>89.0%</td>
</tr>
<tr>
<td>RPS-120-15-C</td>
<td>15V, 5.6A / 8A</td>
<td>89.0%</td>
</tr>
<tr>
<td>RPS-120-24-C</td>
<td>24V, 3.5A / 5A</td>
<td>90.0%</td>
</tr>
<tr>
<td>RPS-120-27-C</td>
<td>27V, 3.15A / 4.5A</td>
<td>90.0%</td>
</tr>
<tr>
<td>RPS-120-48-C</td>
<td>48V, 1.75A / 2.5A</td>
<td>91.0%</td>
</tr>
</tbody>
</table>

### 200W: Single Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Convection/20.5CFM)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-200-12-C</td>
<td>12V, 11.7A / 16.7A</td>
<td>93.0%</td>
</tr>
<tr>
<td>RPS-200-15-C</td>
<td>15V, 9.4A / 13.4A</td>
<td>93.5%</td>
</tr>
<tr>
<td>RPS-200-24-C</td>
<td>24V, 5.9A / 8.4A</td>
<td>94.0%</td>
</tr>
<tr>
<td>RPS-200-27-C</td>
<td>27V, 5.3A / 7.5A</td>
<td>94.0%</td>
</tr>
<tr>
<td>RPS-200-48-C</td>
<td>48V, 3A / 4.2A</td>
<td>95.0%</td>
</tr>
</tbody>
</table>

### 300W: Single Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Convection/20.5CFM)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-300-12-C</td>
<td>12V, 16.67A / 25A</td>
<td>90.0%</td>
</tr>
<tr>
<td>RPS-300-15-C</td>
<td>15V, 13.33A / 20A</td>
<td>90.0%</td>
</tr>
<tr>
<td>RPS-300-24-C</td>
<td>24V, 8.33A / 12.5A</td>
<td>92.5%</td>
</tr>
<tr>
<td>RPS-300-27-C</td>
<td>27V, 7.4A / 11.12A</td>
<td>93.0%</td>
</tr>
<tr>
<td>RPS-300-48-C</td>
<td>48V, 4.17A / 6.25A</td>
<td>93.0%</td>
</tr>
</tbody>
</table>

### 400W: Single Output — Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output (Convection/with Fan)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-400-12□</td>
<td>12V, 20.8A / 33.3A</td>
<td>91.5%</td>
</tr>
<tr>
<td>RPS-400-15□</td>
<td>15V, 16.7A / 26.7A</td>
<td>92.0%</td>
</tr>
<tr>
<td>RPS-400-18□</td>
<td>18V, 13.9A / 22.3A</td>
<td>93.0%</td>
</tr>
<tr>
<td>RPS-400-24□</td>
<td>24V, 10.5A / 16.7A</td>
<td>93.0%</td>
</tr>
<tr>
<td>RPS-400-27□</td>
<td>27V, 9.3A / 14.9A</td>
<td>93.5%</td>
</tr>
<tr>
<td>RPS-400-36□</td>
<td>36V, 7A / 11.2A</td>
<td>94.0%</td>
</tr>
<tr>
<td>RPS-400-48□</td>
<td>48V, 5.3A / 8.4A</td>
<td>94.0%</td>
</tr>
</tbody>
</table>

□ = -C, -TF, -SF;  
-C: Enclosed type, -TF: Top fan with cover, -SF: Side fan with cover
### 100W: Single Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSP-100-3.3</td>
<td>3.3V, 20A</td>
<td>78.0%</td>
</tr>
<tr>
<td>MSP-100-5</td>
<td>5V, 17A</td>
<td>83.0%</td>
</tr>
<tr>
<td>MSP-100-7.5</td>
<td>7.5V, 13.5A</td>
<td>84.0%</td>
</tr>
<tr>
<td>MSP-100-12</td>
<td>12V, 8.5A</td>
<td>87.5%</td>
</tr>
<tr>
<td>MSP-100-15</td>
<td>15V, 7A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-100-24</td>
<td>24V, 4.5A</td>
<td>88.5%</td>
</tr>
<tr>
<td>MSP-100-36</td>
<td>36V, 2.9A</td>
<td>89.0%</td>
</tr>
<tr>
<td>MSP-100-48</td>
<td>48V, 2.2A</td>
<td>90.0%</td>
</tr>
</tbody>
</table>

### 200W: Single Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSP-200-3.3</td>
<td>3.3V, 40A</td>
<td>80.0%</td>
</tr>
<tr>
<td>MSP-200-5</td>
<td>5V, 35A</td>
<td>84.0%</td>
</tr>
<tr>
<td>MSP-200-7.5</td>
<td>7.5V, 26.7A</td>
<td>86.0%</td>
</tr>
<tr>
<td>MSP-200-12</td>
<td>12V, 16.7A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-200-15</td>
<td>15V, 13.4A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-200-24</td>
<td>24V, 8.4A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-200-36</td>
<td>36V, 5.7A</td>
<td>89.0%</td>
</tr>
<tr>
<td>MSP-200-48</td>
<td>48V, 4.3A</td>
<td>89.0%</td>
</tr>
</tbody>
</table>

### 300W: Single Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSP-300-3.3</td>
<td>3.3V, 60A</td>
<td>80.0%</td>
</tr>
<tr>
<td>MSP-300-5</td>
<td>5V, 60A</td>
<td>82.0%</td>
</tr>
<tr>
<td>MSP-300-7.5</td>
<td>7.5V, 40A</td>
<td>86.0%</td>
</tr>
<tr>
<td>MSP-300-12</td>
<td>12V, 27A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-300-15</td>
<td>15V, 22A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-300-24</td>
<td>24V, 14A</td>
<td>87.0%</td>
</tr>
<tr>
<td>MSP-300-36</td>
<td>36V, 9A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-300-48</td>
<td>48V, 7A</td>
<td>89.0%</td>
</tr>
</tbody>
</table>

### 450W: Single Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSP-450-3.3</td>
<td>3.3V, 90A</td>
<td>80.0%</td>
</tr>
<tr>
<td>MSP-450-5</td>
<td>5V, 90A</td>
<td>83.0%</td>
</tr>
<tr>
<td>MSP-450-7.5</td>
<td>7.5V, 60A</td>
<td>86.5%</td>
</tr>
<tr>
<td>MSP-450-12</td>
<td>12V, 37.5A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-450-15</td>
<td>15V, 30A</td>
<td>89.0%</td>
</tr>
<tr>
<td>MSP-450-24</td>
<td>24V, 18.8A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-450-36</td>
<td>36V, 12.5A</td>
<td>89.0%</td>
</tr>
<tr>
<td>MSP-450-48</td>
<td>48V, 9.5A</td>
<td>89.5%</td>
</tr>
</tbody>
</table>

### 600W: Single Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSP-600-3.3</td>
<td>3.3V, 120A</td>
<td>78.5%</td>
</tr>
<tr>
<td>MSP-600-5</td>
<td>5V, 120A</td>
<td>82.0%</td>
</tr>
<tr>
<td>MSP-600-7.5</td>
<td>7.5V, 80A</td>
<td>86.0%</td>
</tr>
<tr>
<td>MSP-600-12</td>
<td>12V, 53A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-600-15</td>
<td>15V, 43A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-600-24</td>
<td>24V, 27A</td>
<td>88.0%</td>
</tr>
<tr>
<td>MSP-600-36</td>
<td>36V, 17.5A</td>
<td>89.0%</td>
</tr>
<tr>
<td>MSP-600-48</td>
<td>48V, 13A</td>
<td>89.0%</td>
</tr>
</tbody>
</table>

### 1000W: Single Output – Class I

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Output</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSP-1000-12</td>
<td>12V, 80A</td>
<td>91.5%</td>
</tr>
<tr>
<td>MSP-1000-15</td>
<td>15V, 64A</td>
<td>92.0%</td>
</tr>
<tr>
<td>MSP-1000-24</td>
<td>24V, 42A</td>
<td>93.0%</td>
</tr>
<tr>
<td>MSP-1000-48</td>
<td>48V, 21A</td>
<td>94.0%</td>
</tr>
</tbody>
</table>
DC/DC Converter

1~2W

Features

- SIP7 package
- Ultra low patient leakage current < 2μA
- 6KVDC or 4.2KVAC high I/O isolation
- ANSI/AAMI ES60601-1 medical safety approved
- ±10% input range

- -40~+85°C operating temperature
- Encapsulated type
- Cooling by free air convection
- 3 years warranty
DC/DC Converter 1~2W

- MDS01: 1W Single Output
- MDD01: 1W Dual Output
- MDS02: 2W Single Output
- MDD02: 2W Dual Output

### MDS01: 1W Single Output

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Vin (V)</th>
<th>Output (V)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDS01L-03</td>
<td>5V (4.5~5.5V)</td>
<td>3.3V, 303mA</td>
<td>73%</td>
</tr>
<tr>
<td>MDS01L-05</td>
<td>5V (4.5~5.5V)</td>
<td>5V, 200mA</td>
<td>78%</td>
</tr>
<tr>
<td>MDS01L-12</td>
<td>5V (4.5~5.5V)</td>
<td>12V, 84mA</td>
<td>77%</td>
</tr>
<tr>
<td>MDS01L-15</td>
<td>5V (4.5~5.5V)</td>
<td>15V, 67mA</td>
<td>75%</td>
</tr>
<tr>
<td>MDS01M-05</td>
<td>12V (10.8~13.2V)</td>
<td>5V, 200mA</td>
<td>78%</td>
</tr>
<tr>
<td>MDS01M-12</td>
<td>12V (10.8~13.2V)</td>
<td>12V, 84mA</td>
<td>82%</td>
</tr>
<tr>
<td>MDS01M-15</td>
<td>12V (10.8~13.2V)</td>
<td>15V, 67mA</td>
<td>83%</td>
</tr>
<tr>
<td>MDS01N-05</td>
<td>24V (21.6~26.4V)</td>
<td>5V, 200mA</td>
<td>77%</td>
</tr>
<tr>
<td>MDS01N-12</td>
<td>24V (21.6~26.4V)</td>
<td>12V, 84mA</td>
<td>79%</td>
</tr>
<tr>
<td>MDS01N-15</td>
<td>24V (21.6~26.4V)</td>
<td>15V, 67mA</td>
<td>79%</td>
</tr>
</tbody>
</table>

### MDD01: 1W Dual Output

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Vin (V)</th>
<th>Output (±V)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDD01L-05</td>
<td>5V (4.5~5.5V)</td>
<td>±5V, ±100mA</td>
<td>79%</td>
</tr>
<tr>
<td>MDD01L-09</td>
<td>5V (4.5~5.5V)</td>
<td>±9V, ±56mA</td>
<td>81%</td>
</tr>
<tr>
<td>MDD01L-12</td>
<td>5V (4.5~5.5V)</td>
<td>±12V, ±42mA</td>
<td>77%</td>
</tr>
<tr>
<td>MDD01L-15</td>
<td>5V (4.5~5.5V)</td>
<td>±15V, ±34mA</td>
<td>77%</td>
</tr>
<tr>
<td>MDD01M-05</td>
<td>12V (10.8~13.2V)</td>
<td>±5V, ±100mA</td>
<td>78%</td>
</tr>
<tr>
<td>MDD01M-09</td>
<td>12V (10.8~13.2V)</td>
<td>±9V, ±56mA</td>
<td>82%</td>
</tr>
<tr>
<td>MDD01M-12</td>
<td>12V (10.8~13.2V)</td>
<td>±12V, ±42mA</td>
<td>75%</td>
</tr>
<tr>
<td>MDD01M-15</td>
<td>12V (10.8~13.2V)</td>
<td>±15V, ±34mA</td>
<td>76%</td>
</tr>
<tr>
<td>MDD01N-05</td>
<td>24V (21.6~26.4V)</td>
<td>±5V, ±100mA</td>
<td>77%</td>
</tr>
<tr>
<td>MDD01N-09</td>
<td>24V (21.6~26.4V)</td>
<td>±9V, ±56mA</td>
<td>79%</td>
</tr>
<tr>
<td>MDD01N-12</td>
<td>24V (21.6~26.4V)</td>
<td>±12V, ±42mA</td>
<td>77%</td>
</tr>
<tr>
<td>MDD01N-15</td>
<td>24V (21.6~26.4V)</td>
<td>±15V, ±34mA</td>
<td>77%</td>
</tr>
</tbody>
</table>

### MDS02: 2W Single Output

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Vin (V)</th>
<th>Output (V)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDS02L-05</td>
<td>5V (4.5~5.5V)</td>
<td>5V, 400mA</td>
<td>77%</td>
</tr>
<tr>
<td>MDS02L-12</td>
<td>5V (4.5~5.5V)</td>
<td>12V, 167mA</td>
<td>80%</td>
</tr>
<tr>
<td>MDS02L-15</td>
<td>5V (4.5~5.5V)</td>
<td>15V, 133mA</td>
<td>79%</td>
</tr>
<tr>
<td>MDS02M-05</td>
<td>12V (10.8~13.2V)</td>
<td>5V, 400mA</td>
<td>75%</td>
</tr>
<tr>
<td>MDS02M-12</td>
<td>12V (10.8~13.2V)</td>
<td>12V, 167mA</td>
<td>83%</td>
</tr>
<tr>
<td>MDS02M-15</td>
<td>12V (10.8~13.2V)</td>
<td>15V, 133mA</td>
<td>84%</td>
</tr>
<tr>
<td>MDS02N-05</td>
<td>24V (21.6~26.4V)</td>
<td>5V, 400mA</td>
<td>80%</td>
</tr>
<tr>
<td>MDS02N-12</td>
<td>24V (21.6~26.4V)</td>
<td>12V, 167mA</td>
<td>83%</td>
</tr>
<tr>
<td>MDS02N-15</td>
<td>24V (21.6~26.4V)</td>
<td>15V, 133mA</td>
<td>85%</td>
</tr>
</tbody>
</table>

### MDD02: 2W Dual Output

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Vin (V)</th>
<th>Output (±V)</th>
<th>Effi.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDD02L-05</td>
<td>5V (4.5~5.5V)</td>
<td>±5V, ±200mA</td>
<td>78%</td>
</tr>
<tr>
<td>MDD02L-09</td>
<td>5V (4.5~5.5V)</td>
<td>±9V, ±111mA</td>
<td>81%</td>
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<tr>
<td>MDD02L-12</td>
<td>5V (4.5~5.5V)</td>
<td>±12V, ±83mA</td>
<td>78%</td>
</tr>
<tr>
<td>MDD02L-15</td>
<td>5V (4.5~5.5V)</td>
<td>±15V, ±67mA</td>
<td>79%</td>
</tr>
<tr>
<td>MDD02M-05</td>
<td>12V (10.8~13.2V)</td>
<td>±5V, ±200mA</td>
<td>78%</td>
</tr>
<tr>
<td>MDD02M-09</td>
<td>12V (10.8~13.2V)</td>
<td>±9V, ±111mA</td>
<td>83%</td>
</tr>
<tr>
<td>MDD02M-12</td>
<td>12V (10.8~13.2V)</td>
<td>±12V, ±83mA</td>
<td>83%</td>
</tr>
<tr>
<td>MDD02M-15</td>
<td>12V (10.8~13.2V)</td>
<td>±15V, ±67mA</td>
<td>82%</td>
</tr>
<tr>
<td>MDD02N-05</td>
<td>24V (21.6~26.4V)</td>
<td>±5V, ±200mA</td>
<td>77%</td>
</tr>
<tr>
<td>MDD02N-09</td>
<td>24V (21.6~26.4V)</td>
<td>±9V, ±111mA</td>
<td>83%</td>
</tr>
<tr>
<td>MDD02N-12</td>
<td>24V (21.6~26.4V)</td>
<td>±12V, ±83mA</td>
<td>82%</td>
</tr>
<tr>
<td>MDD02N-15</td>
<td>24V (21.6~26.4V)</td>
<td>±15V, ±67mA</td>
<td>82%</td>
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## Selection Guide

### AC/DC External Adaptor

<table>
<thead>
<tr>
<th>Type</th>
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<th>Rated Power (W)</th>
<th>Fan</th>
<th>No Fan</th>
<th>Input Voltage (VAC)</th>
<th>Output Voltage (VDC)</th>
<th>Dimension (mm)</th>
<th>Insulation</th>
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<tbody>
<tr>
<td>Wall-mounted</td>
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<td>GSM06U/E</td>
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<td>6</td>
<td></td>
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<td>5, 6, 7, 5, 9, 12, 15, 18, 24</td>
<td>66 x 32 x 42.5</td>
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<tr>
<td></td>
<td></td>
<td>GSM18U/E</td>
<td>-</td>
<td>18</td>
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<td>5, 7, 5, 9, 12, 15, 18, 24, 48</td>
<td>79 x 54 x 33</td>
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<tr>
<td></td>
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<td>GSM25U/E</td>
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<td>25</td>
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<tr>
<td></td>
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<td>GSM36U/E</td>
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<td></td>
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<td>GEM12I</td>
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<td>5, 7, 5, 9, 12, 15, 18, 24, 48</td>
<td>73.9 x 39 x 48.5</td>
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<td>GEM30I</td>
<td>-</td>
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<td>5, 7, 5, 9, 12, 15, 18, 24, 48</td>
<td>75.5 x 39.1 x 56.2</td>
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<tr>
<td></td>
<td></td>
<td>GEM18I/40I</td>
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<td>75 x 39.1 x 56.2</td>
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<td>GSM25B</td>
<td>-</td>
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<td>GSM36B</td>
<td>-</td>
<td>36</td>
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<td></td>
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<td>40</td>
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<td>60</td>
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<td>120</td>
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<td>GSM160A/B</td>
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<td>160</td>
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<td>5, 7, 5, 9, 12, 15, 18, 24, 48</td>
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<td></td>
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<td>GSM220A/B</td>
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<td>220</td>
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<td>5, 7, 5, 9, 12, 15, 18, 24, 48</td>
<td>79 x 54 x 33</td>
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### AC/DC Open Frame Type

<table>
<thead>
<tr>
<th>Picture</th>
<th>Model</th>
<th>Rated Power (W)</th>
<th>Input Voltage (VAC)</th>
<th>Output Voltage (VDC)</th>
<th>Dimension (mm)</th>
<th>Insulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPS-30</td>
<td>-</td>
<td>30</td>
<td>80~264</td>
<td>3.3, 5, 7.5, 12, 15, 24, 48</td>
<td>76.2 x 50.8 x 24 (3” x 2”)</td>
<td></td>
</tr>
<tr>
<td>RPS-45</td>
<td>-</td>
<td>45</td>
<td>80~264</td>
<td>3.3, 5, 7.5, 12, 15, 24, 48</td>
<td>76.2 x 50.8 x 24 (3” x 2”)</td>
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</tr>
<tr>
<td>RPS-65</td>
<td>-</td>
<td>65</td>
<td>80~264</td>
<td>3.3, 5, 7.5, 12, 15, 24, 48</td>
<td>76.2 x 50.8 x 24 (3” x 2”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPS-60</td>
<td>-</td>
<td>60</td>
<td>90~264</td>
<td>3.3, 5, 7.5, 12, 15, 24, 48</td>
<td>76.2 x 50.8 x 24 (3” x 2”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPD-60</td>
<td>-</td>
<td>60</td>
<td>90~264</td>
<td>5, 12, 5, 24</td>
<td>101.6 x 50.8 x 29 (4” x 2”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPT-60</td>
<td>-</td>
<td>60</td>
<td>90~264</td>
<td>33, ±5, ±12, ±15, 24</td>
<td>101.6 x 50.8 x 29 (4” x 2”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPS-120</td>
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<td>84</td>
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<td>12, 15, 24, 27, 48</td>
<td>127 x 76.2 x 31 (5” x 3”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPS-200</td>
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<td>140</td>
<td>80~264</td>
<td>12, 15, 24, 27, 48</td>
<td>127 x 76.2 x 31 (5” x 3”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPS-75</td>
<td>100</td>
<td>75</td>
<td>90~264</td>
<td>3.3, 5, 12, 15, 24, 36, 48</td>
<td>127 x 76.2 x 31 (5” x 3”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPD-75</td>
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<td>75</td>
<td>90~264</td>
<td>5, 12, 5, 24</td>
<td>127 x 76.2 x 31 (5” x 3”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPT-75</td>
<td>100</td>
<td>75</td>
<td>90~264</td>
<td>±5, ±12, ±15, 24</td>
<td>127 x 76.2 x 31 (5” x 3”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPS-160</td>
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<td>110</td>
<td>90~264</td>
<td>5, 12, 15, 24, 48</td>
<td>127 x 76.2 x 31 (5” x 3”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPT-160</td>
<td>150</td>
<td>100</td>
<td>90~264</td>
<td>±5, ±12, ±15, 24</td>
<td>127 x 76.2 x 31 (5” x 3”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPS-300</td>
<td>300</td>
<td>200</td>
<td>80~264</td>
<td>12, 15, 24, 27, 48</td>
<td>127 x 76.2 x 31 (5” x 3”)</td>
<td>Class I</td>
</tr>
<tr>
<td>RPS-400</td>
<td>400</td>
<td>250</td>
<td>80~264</td>
<td>12, 15, 18, 24, 27, 36, 48</td>
<td>127 x 76.2 x 31 (5” x 3”)</td>
<td>Class I</td>
</tr>
<tr>
<td>MPQ-200</td>
<td>-</td>
<td>200</td>
<td>90~264</td>
<td>±5, ±12, ±15, 24</td>
<td>177.8 x 107.2 x 35.5 (7” x 4.2”)</td>
<td>Class I</td>
</tr>
</tbody>
</table>
### AC/DC | On Board Type

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Power (W)</th>
<th>Input Voltage (VAC)</th>
<th>Output Voltage (VDC)</th>
<th>Dimension (mm)</th>
<th>Insulation</th>
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</thead>
<tbody>
<tr>
<td>NMP650</td>
<td>650</td>
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<td>5, 12, 24, 48</td>
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</tr>
<tr>
<td>NMP1K2</td>
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<td>5, 12, 24, 48</td>
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</tr>
<tr>
<td>RPS-120-x-C</td>
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<td>80~264</td>
<td>12, 15, 24, 27, 48</td>
<td>130 x 86 x 43</td>
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</tr>
<tr>
<td>RPS-200-x-C</td>
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<td>80~264</td>
<td>12, 15, 24, 27, 48</td>
<td>130 x 86 x 43</td>
<td>Class I</td>
</tr>
<tr>
<td>RPS-300-x-C</td>
<td>300</td>
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<td>12, 15, 24, 27, 48</td>
<td>130 x 86 x 43</td>
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<tr>
<td>RPS-400-x-C</td>
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<td>RPS-400-x-TF</td>
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<td>12, 15, 18, 24, 27, 36, 48</td>
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<td>RPS-400-x-SF</td>
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<td>12, 15, 18, 24, 27, 36, 48</td>
<td>130 x 86 x 66.5</td>
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<td>MSP-100</td>
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<td>3, 5, 7.5, 12, 15, 24, 36, 48</td>
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<td>MSP-200</td>
<td>-</td>
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<td>3, 5, 7.5, 12, 15, 24, 36, 48</td>
<td>199 x 98 x 38</td>
<td>Class I</td>
</tr>
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<td>MSP-300</td>
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<td>MSP-600</td>
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<td>MSP-1000</td>
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### AC/DC | Enclosed Type

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<th>Model</th>
<th>Rated Power (W)</th>
<th>Input Voltage (VAC)</th>
<th>Output Voltage (VDC)</th>
<th>Dimension (mm)</th>
<th>Insulation</th>
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<tbody>
<tr>
<td>NFM-05</td>
<td>5</td>
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<td>3, 5, 12, 15, 24</td>
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<td>69.8 x 48 x 22</td>
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<td>NFM-20</td>
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<td>3, 5, 12, 15, 24</td>
<td>88.9 x 50.8 x 19.3</td>
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### DC/DC | Converter

<table>
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<th>Input Voltage (VDC)</th>
<th>Output Voltage (VDC)</th>
<th>Dimension (mm)</th>
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<tbody>
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<td>L: 4.5 ~ 5.5</td>
<td>3, 5, 12, 15</td>
<td>19.5 x 9.8 x 12.5 (0.77&quot; x 0.39&quot; x 0.49&quot;)</td>
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<td>MDS02</td>
<td>-</td>
<td>M: 10.8 ~ 13.2</td>
<td>5, 12, 15</td>
<td>19.5 x 9.8 x 12.5 (0.77&quot; x 0.39&quot; x 0.49&quot;)</td>
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<tr>
<td>MDD01/02</td>
<td>-</td>
<td>N: 21.6 ~ 26.4</td>
<td>±5, ±9, ±12, ±15</td>
<td>19.5 x 9.8 x 12.5 (0.77&quot; x 0.39&quot; x 0.49&quot;)</td>
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