JMM-7000™ Rugged PC/104 Power Supplies

The JMM-7000 family provides compact, rugged, MIL-compliant DC power in the popular PC/104 form factor (3.6 x 3.8” / 90x96mm). JMM-7000 models offer compliance to a range of standards, including MIL-STD-461, MIL-STD-704, MIL-STD-1275, MIL-STD-810G, and DO-160. Optional 500V isolation, brownout protection, and supercapacitor-based UPS enhance these supplies’ utility in compact airborne, land, and sea vehicle electronic systems.

The JMM-7300 series provides full MIL standards compliance. The depopulated JMM-7000 series are intended for use in commercial / industrial applications where backup power or isolated power is required.

Features
- Cost-effective, highly flexible power solution
- Multiple output options:
  - 12VDC output, 40W, 500VDC isolation
  - 5VDC output, 25W, 500VDC isolation
  - 5-28VDC output, 40W, non-isolated
- EMI compatibility to MIL-STD-461C/D/E/F and DO-160C/D/E/F/G requirements
- Input immunity per MIL-STD704A/D/E/F, MIL-STD-1275A/B, and DO-160 cat A, B, and Z
- Transient protection: 100VDC / 50ms, 600VDC / 20us spikes
- Brownout protection: 6VDC / 1 sec
- Reverse polarity protection
- Designed to meet MIL-STD-810G shock/vibration specifications
- Optional UPS backup system using plug-on high-efficiency supercapacitor energy packs
- Built-in microcontroller provides real-time status of power supply and backup energy bank
- 9-36VDC input, 2A max
- 3.55 x 3.775” (90 x 96mm) PC/104
- -40 to +85°C operating temperature

Rugged, Isolated, MIL-Grade

Integrated heat spreader supplied with all models

JMM-7000 Power Supply Block Diagram

www.diamondsystems.com  |  Diamond Systems Corporation  |  Sunnyvale, California  USA  |  +1-650-810-2500
**Available Configurations**

<table>
<thead>
<tr>
<th>Model</th>
<th>461 Filter</th>
<th>704 / 1275</th>
<th>UPS</th>
<th>( V_{\text{out}} )</th>
<th>Power</th>
<th>Isolated</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>JMM-7312-ISO-UPS</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>12V</td>
<td>40W</td>
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<td>Full feature 12V</td>
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<tr>
<td>JMM-7305-ISO-UPS</td>
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<td>•</td>
<td>•</td>
<td>5V</td>
<td>40W</td>
<td>•</td>
<td>Full feature 5V</td>
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<tr>
<td>JMM-7312-UPS</td>
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<td>•</td>
<td>•</td>
<td>12V</td>
<td>40W</td>
<td></td>
<td>Full feature 12V without isolation</td>
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<tr>
<td>JMM-7305-UPS</td>
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<td>•</td>
<td>•</td>
<td>5V</td>
<td>25W</td>
<td></td>
<td>Full feature 5V without isolation</td>
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<tr>
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<td>•</td>
<td>•</td>
<td>12V</td>
<td>40W</td>
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<td>MIL compliant non-isolated 12V</td>
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<tr>
<td>JMM-7305</td>
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<td>•</td>
<td>•</td>
<td>5V</td>
<td>25W</td>
<td></td>
<td>MIL compliant non-isolated 5V</td>
</tr>
<tr>
<td>JMM-7012-ISO</td>
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<td></td>
<td>•</td>
<td>12V</td>
<td>40W</td>
<td>•</td>
<td>Basic isolated 12V power</td>
</tr>
<tr>
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<td>•</td>
<td>5V</td>
<td>40W</td>
<td>•</td>
<td>Basic isolated 5V power</td>
</tr>
<tr>
<td>JMM-7012-UPS</td>
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<td></td>
<td>•</td>
<td>12V</td>
<td>40W</td>
<td></td>
<td>Basic isolated power with UPS</td>
</tr>
<tr>
<td>JMM-7005-UPS</td>
<td>•</td>
<td></td>
<td>•</td>
<td>5V</td>
<td>25W</td>
<td></td>
<td>Basic isolated 5V with UPS</td>
</tr>
</tbody>
</table>

**SuperCapacitor Backup**

The **SEP-7000** series of PC/104-sized supercapacitor energy packs is designed for use with the JMM-7000 power supplies with **UPS** option. These packs provide up to 3300 joules (watt-sec) of backup energy to maintain stable system operation in case of power interruption. The charge / backup controller on the JMM-7000 utilizes a new supercapacitor charging technology that automatically controls the charging current and voltage of each capacitor bank in the pack to avoid overcharging or other potentially damaging fault conditions. Charge / discharge status and other control functions are available via LEDs on the JMM-7000 and via USB connection to the host CPU.

SEP-7000 energy packs are available in two capacities and two configurations. A plug-on configuration mounts directly to the bottom side of the JMM-7000 to eliminate cables and create the most compact, rugged solution. A cable-connected configuration allows the energy packs to be positioned at a remote location to fit varying application requirements.

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