Industrial Uninterruptable Power Supply (UPS)

**Specifications**

The Panduit UPS Uninterruptible Power Supply is powered by 24VDC (nominal) input. It shall provide a 24VDC output, with an output rating of 35 Watts (max.). The Panduit UPS employs Ultracapacitors for energy storage instead of rechargeable batteries. The compact power supply offers convenient DIN rail mounting and is for use in NEMA control or equipment cabinets commonly used in Industrial Automation.

**Technical Information**

<table>
<thead>
<tr>
<th>Input Power:</th>
<th>24.0 to 28.0 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Power:</td>
<td>35 Watts (max.)</td>
</tr>
<tr>
<td>Control output:</td>
<td>1x Form A</td>
</tr>
<tr>
<td>Operating Temp:</td>
<td>-40°C to +60°C</td>
</tr>
<tr>
<td>Storage capacity:</td>
<td>15kW-sec</td>
</tr>
<tr>
<td>Standards:</td>
<td>UL 1778, UL 60950-1, CSA C22.2 No. 107.3-05, CSA C22.2 No 60950-1, ISA 12.12.01 Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified)</td>
</tr>
</tbody>
</table>

| Mounting:        | DIN rail mount    |
| Event management:| Yes (event log)   |
| Hold time prediction: | Yes    |
| RoHS compliant:  | Yes              |
| Lifetime prediction: | Yes    |
| Physical interface: | Ethernet (RJ45) |
| Network interface: | EtherNet/IP       |
| User interface:   | HTML browser     |

**Key Features and Benefits**

**Ultracapacitor energy storage technology**

- No Battery design eliminates the #1 cause of UPS failures
- Maintenance-free for lower cost of ownership eliminating battery inspections, testing, replacement, disposal and spare parts management
- No HazMat waste battery disposal costs
- Eliminates hydrogen gas buildup inside the enclosure

**Remote load and capacity monitoring**

- Remotely monitor device health from the floor or your office
- Ability to view multiple devices; saves time of having to physically connect a laptop to individual devices to perform health checks

**Network Compatible**

- EtherNet/IP connectivity to multiple devices with virtually no distance limitations; easily integrates with factory automation software
- User interface through standard web browsers requires no proprietary software and is platform-independent

**Compact design**

- 80mm DIN Rail width saves valuable panel space; single unit design installs quickly and easily
- Wide operating temperature range: -40°C to +60°C is standard

**Applications**

The Panduit Industrial UPS is intended to provide uninterrupted power for critical applications including managed network switches, micro PLCs, and HMIs deployed on the factory floor. The device is suitable for use in extremely low temperature environments and elevated temperatures without loss of performance or reduced life.
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<table>
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<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>UPS003024024015</td>
<td>Uninterruptible Power Supply, 35 Watt, 24VDC in, 24VDC out, 15kJ, DIN rail mount.</td>
</tr>
<tr>
<td>UPS003LSM</td>
<td>UPS Load Sense Module. Optional accessory for use in dual, redundant power supply configurations to monitor load on primary supply.</td>
</tr>
</tbody>
</table>

Dimensions are metric. (Dimensions in parentheses are inches)

For a copy of Panduit product warranties, log on to www.panduit.com/warranty

For more information
Visit us at www.panduit.com
Contact Customer Service by email: cs@panduit.com or by phone: 800.777.3300

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“No battery, maintenance-free” UPS

1. **Is the Panduit UPS an on-line, line interactive or standby UPS?**
   The Panduit UPS is an “off-line” UPS. That is, when Input Power is present, it is passed-through to the Output Power along with charging the Energy Storage inside the UPS. When Input Power is not present, the UPS converts the stored energy and provides Output Power. A summary of the common definitions of the various UPS types (topologies) is below:

<table>
<thead>
<tr>
<th>UPS Topology</th>
<th>Description</th>
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<tr>
<td><strong>On-Line</strong></td>
<td>Uses a &quot;double conversion&quot; method of accepting AC input, rectifying to DC for passing through the battery (or battery strings), then inverting back to 120VAC for powering the protected equipment.</td>
</tr>
<tr>
<td><strong>Line-Interactive</strong></td>
<td>Maintains the inverter in line and redirects the battery’s DC current path from the normal charging mode to supplying current when power is lost.</td>
</tr>
<tr>
<td><strong>Standby</strong></td>
<td>The load is powered directly by the input power and the backup power circuitry is only invoked when the utility power fails.</td>
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</tbody>
</table>

2. **What kind of load devices can this UPS power?**
   Target applications are 24VDC input industrial, managed switches and small Human Machine Interfaces (HMIs). Examples of compatible switches include Allen-Bradley Stratix, Cisco IE3000/IE3K, Hirschmann RSR, Moxa EDS and Siemens SCALANCE families. The UPS provides a maximum of 35 Watts to power up to 2 “base” switches plus expansion modules. Examples of HMIs include the Allen-Bradley PanelViewPlus models 400 and 600. Please check the manufacturers’ power requirements to determine how many device(s) can be powered by the UPS.

3. **Can multiple UPS devices be combined for more power or Hold Time?**
   As with power supplies, you cannot combine the outputs of multiple devices to “add” more power. For increased Hold Times, you can use multiple UPS devices and a “redundancy” module, which takes power from multiple inputs and automatically switches to another input when one input stops providing power.

4. **What is “Time to 80% Capacity”?**
   The ultracapacitor devices used to store energy, lose capacity with time. It is an industry standard method to define “end of life” as the point when the devices lose 20%, or reach 80% of their original capacity. It is important to know, though, that despite losing capacity, the device will still remain operational for a long time.
5. *Why does the UPS monitor temperature?*
   The ultracapacitor devices used to store energy, lose capacity faster with higher temperatures. Instead of using a constant or “average” temperature to predict remaining capacity, the Panduit UPS integrates temperature over time. It does this by starting with an initial “life” of 20 years, and subtracting minutes when the UPS is at 25 deg C or lower. When it senses that temperature is higher, it calculates and subtracts minutes “faster”, which accurately predicts the time remaining to reach 80% of its original capacity.

6. *Why does the Charge Power vary?*
   The UPS includes a setting, called “Charge Power”, which limits the maximum power used to charge the energy storage elements. It is important to set the Charge Power so that the total power going into the UPS does not exceed the maximum output of the power supply. The UPS will vary the charge power as the Charge Level increases, but will not exceed the Charge Power setting.

7. *Why does the IP Address Mode default to Dynamic Addressing?*
   Cisco and Rockwell Automation now recommend DHCP Persistence as a valid option along with static addressing for deploying IP addresses for IACS devices. During maintenance operations, where downtime cost and mean time to recovery (MTTR) is a significant issue, manual configuration of a static IP address for each replaced IACS device can take valuable time.
   DHCP Persistence enables IACS implementers to reserve and pre-assign an IP address to a specific IE switch port. This enables an IACS device connected to that IE switch port, configured for dynamic IP allocation, to always receive a consistent IP address regardless of its MAC address. This capability helps to reduce the amount of time required to provision or replace IACS devices, such as drives and I/O. This also helps to reduce the required level of skilled resources to provision or replace an IACS device.
   There are two typical use cases for implementing DHCP Persistence: replacement of a failed IACS device, and setting up a new “out-of-the-box” IACS device.
   As part of the ODVA Standard for EtherNet/IP, it is required that all complying devices are able to have an address issued via DHCP or BOOTP “out-of-the-box”. Because of this, all Rockwell Automation EtherNet/IP enabled devices have BOOTP enabled by default.

8. *When should I use the accessory Load Sense Module and why?*
   The optional accessory Load Sense Module (LSM) should be used in dual, redundant power supply configurations. The LSM allows the UPS to be in series with the Secondary power supply and the load, but monitor the Primary power supply current to the load. Putting the UPS in the Secondary circuit save power and prevents heat buildup caused by the UPS in “pass through” mode. As a benefit, the UPS can monitor both the Primary and Secondary power supplies and the load device (and report via Web Browser Interface or via EtherNet/IP to a FactoryTalk network device).
9. **How do I reset the Username or Password for the Web Browser Interface?**
   The Username and Password for the Web Browser Interface (WBI) can only be reset by performing a Restore to Factory Default. While this function can be performed through the WBI or EtherNet/IP, the most common method is to use a #1 paper clip to press the Reset button through a hole on the bottom of the UPS. Holding the Reset button in for approximately 10 seconds will perform the Restore. After the Restore, the default Username (“Panduit UPS”) and Password (the unit’s serial number) will be in effect.

10. **How do I know if my UPS has the latest software?**
    Using the Web Browser Interface (WBI), navigate to the Setting Page and note the current Firmware Version displayed. Then check [www.panduit.com/ups](http://www.panduit.com/ups) or [www.panduit.com/support](http://www.panduit.com/support) to find the latest version of the UPS firmware. If needed, download the firmware at [www.panduit.com](http://www.panduit.com) to a local storage device. Then, use the WBI button Update to locate and upload the latest version to the UPS.

11. **Is the Panduit UPS powered by a Flux Capacitor?**
    No, the Panduit IA UPS use “Ultra-capacitors” to store energy, instead of rechargeable batteries.

12. **How many “jiga”-watts of power can it supply?**
    The IA UPS is rated for a maximum load of 35 Watts, or 0.000 000 035 Giga-Watts.

13. **Does it need to run at precisely 88 miles per hours to work?**
    No, the IA UPS works best when stationary, installed in a control panel or cabinet.

14. **Is it made from recycled parts of a DeLorean?**
    No. We use only the freshest, virgin parts with no recycled post-consumer waste content.

15. **How did you come up with the idea?**
    One of our Research Scientists was standing on his toilet and hanging a clock, and fell and hit his head on the sink. And that’s when he came up with the idea for the Ultra-capacitor UPS.