JASPER ELECTRONICS

*Innovative Specialty DC Power Systems*

## CONTACT

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# Model GPAD301MXX-1H Convection / Conduction Cooled Power Supply

## 90-264 VAC / Single 300W Output

## GENERAL OVERVIEW

Jasper's highly efficient and compact Low-Noise (Fanless) Convection / Conduction Cooled Power Supplies are the ideal choice for low-voltage, high-current, high-power density applications including medical equipment, IT, sensitive electronics, and other applications where audible noise and maintenance must be kept to a minimum. Because there are no fans to fail or require periodic cleaning, maintenance is reduced and MTBF is enhanced. Units can also be optionally ruggedized against shock, vibration, and humidity to meet MIL-STDs such as MIL-STD-810 and MIL-STD-167 for military applications.

These Jasper GPAD-Series supplies, available from 200-500 Watts continuous output power, can be used in either convection cooling or conduction cooling configurations. The factory recommends conduction cooling when used in ambient temperatures over +50°C. All models have a 3 year warranty. Please see below for more details.

## FEATURES ON SELECT MODELS INCLUDE:

- Wide operating temperature: -20°C to +70°C
- Power factor: ≥0.95
- Output over voltage, over current, short circuit and over temperature protection
- Flame retardant and moisture-proof design
- Long life 125°C polymer output capacitors
- Low leakage current ≤0.5mA
- LED Lamp working status indication
- High efficiency
- Compact size of 196x50x26mm (LxWxH)
- Two supplies can be used in parallel

## PARTIAL 300W GPAD MODEL SELECTION

| MODEL | INPUT VOLTAGE (VAC) | OUTPUT VOLTAGE (VDC) | OUTPUT CURRENT (A) | RATED POWER (W) | DIMENSION (LxWxH) |
|---|---|---|---|---|---|
| **GPAD301M12-1H** | 90-264 | 12 | 0-25 | 300 | 196 x 50 x 26mm |
| **GPAD301M15-1H** | 90-264 | 15 | 0-20 | 300 | 196 x 50 x 26mm |
| **GPAD301M24-1H** | 90-264 | 24 | 0-12.5 | 300 | 196 x 50 x 26mm |
| **GPAD301M28-1H** | 90-264 | 28 | 0-10.7 | 300 | 196 x 50 x 26mm |
| **GPAD301M36-1H** | 90-264 | 36 | 0-8.3 | 300 | 196 x 50 x 26mm |
| **GPAD301M48-1H** | 90-264 | 48 | 0-6.2 | 300 | 196 x 50 x 26mm |
| **GPAD301M54-1H** | 90-264 | 54 | 0-5.5 | 300 | 196 x 50 x 26mm |

EUROPEAN STANDARDS

Rev B-June-14-2026

## TECHNICAL SPECIFICATIONS

| INPUT CHARACTERISTICS | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | | **Min** | **Typ** | **Max** | **Unit** | **Remark** |
| **Input Voltage Range** | | 90 | 220 | 264 | VAC | |
| **Input Current** | | | | 4 | A | |
| **Inrush Current** | | | | 50 | A | 220 VAC input, rated load |
| **Input Frequency Range** | | 47 | 50 | 63 | Hz | |
| **Power Factor** | | 0.95 | | | | 220 VAC input, rated load |
| **Harmonic Distortion** | | | | 15 | % | 230 VAC input, rated / half load |
| **OUTPUT CHARACTERISTICS** | | | | | | |
| **Parameter** | | **Min** | **Typ** | **Max** | **Unit** | **Remark** |
| **Output Voltage** | **GPAD301M12-1H** | | +12V | | VDC | The output voltage is set according to requirements |
| | **GPAD301M15-1H** | | +15V | | VDC | |
| | **GPAD301M24-1H** | | +24V | | VDC | |
| | **GPAD301M28-1H** | | +28V | | VDC | |
| | **GPAD301M36-1H** | | +36V | | VDC | |
| | **GPAD301M48-1H** | | +48V | | VDC | |
| | **GPAD301M54-1H** | | +54V | | VDC | |
| **Output Current** | **GPAD301M12-1H** | 0 | | 25 | A | The output voltage is set according to requirements |
| | **GPAD301M15-1H** | 0 | | 20 | A | |
| | **GPAD301M24-1H** | 0 | | 12.5 | A | |
| | **GPAD301M28-1H** | 0 | | 10.7 | A | |
| | **GPAD301M36-1H** | 0 | | 8.3 | A | |
| | **GPAD301M48-1H** | 0 | | 6.2 | A | |
| | **GPAD301M54-1H** | 0 | | 5.5 | A | |
| **Output Power** | | | | 300 | W | |
| **Efficiency** | | | 92 | | % | 220VAC input, rated loss |
| **Ripple & Noise (Peak-Peak)** | | | | 200 | m Vp-p | Rated input and load range. output is decoupled by a high frequency 0.1 µF cap and one 10µF electrolytic capacitors. Bandwidth set at 20MHz |
| **Load Regulation** | | | | ±2 | % | |
| **Line Regulation** | | | | ±0.5 | % | |
| **Temperature Coefficient** | | | | ±0.03 | % / °C | |
| **ON / OFF Overshoot** | | | | ±10 | % | |
| **Dynamic Response Overshoot** | | | | ±5 | % | 25%~50%~25%, 50%~75%~50% load change, rate 0.1 A / us, cycle time 4ms |
| **Dynamic Response Recovery Time** | | | | 200 | ūS | |
| **Start-Up Time** | | | | 2 | S | 220VAC input, rated load |
| **Isolation Function** | | | | | | Two power supplies can be used in parallel. In order to obtain a better current sharing effect when in use, it is necessary to connect the current sharing buses of the two power supplies in parallel. |

**Specifications subject to change without notice.*

| PROTECTION | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | | **Min** | **Typ** | **Max** | **Unit** | **Remark** |
| **Over Voltage Protect** | **GPAD301M12-1H** | 13.5 | | | VDC | 220VAC input, half load, hiccup mode |
| | **GPAD301M15-1H** | 17 | | | VDC | |
| | **GPAD301M24-1H** | 26 | | | VDC | |
| | **GPAD301M28-1H** | 30 | | | VDC | |
| | **GPAD301M36-1H** | 38 | | | VDC | |
| | **GPAD301M48-1H** | 50 | | | VDC | |
| | **GPAD301M54-1H** | 56 | | | VDC | |
| **Over Current Protect** | **GPAD301M12-1H** | 26 | | | A | Hiccup mode, self recovery |
| | **GPAD301M15-1H** | 21 | | | A | |
| | **GPAD301M24-1H** | 13.5 | | | A | |
| | **GPAD301M28-1H** | 12 | | | A | |
| | **GPAD301M36-1H** | 9.5 | | | A | |
| | **GPAD301M48-1H** | 7.2 | | | A | |
| | **GPAD301M54-1H** | 6 | | | A | |
| **Short Circuit Protect** | | Can withstand permanent short. Self recover. | | | | |
| **Over Temperature Protect** | | Hiccup mode, self recovery | | | | |
| **High Temperature Protect** | | Heat is dissipated through the power supply chassis. Avoid touching chassis while in operation | | | | |

| SAFETY AND INSULATION CLASS | | |
|---|---|---|
| **Parameter** | **Standard Requirement** | **Remark** |
| **Input-Output** | 3000VAC/≤10mA/1 min | No arcing, no breakdown |
| **Input-Earth** | 1500VAC/≤10mA/1 min | |
| **Output-Earth** | 500VDC/≤10mA /1 min | |
| **Ground Continuity** | <0.1Ω | Test Current: 32A, Test duration: 120S |
| **Insulation Resistance** | ≥10MΩ | Normal atmospheric pressure, Relative humidity <90%, non-condensing, Test voltage: 500VDC |
| **Leakage Current** | ≤0.7m A | 264VAC / 50HZ Input |

| EMC TEST | | |
|---|---|---|
| **Test Item** | **Test Requirement** | **Standard** |
| **ESD** | Air Discharge, ±8KV | IEC 61000-4-2 (Criterion A) |
| | Contact Discharge, ±6KV | IEC 61000-4-2 (Criterion A) |
| **Radiated RF field (RS)** | Freq: 80MHz~2GHz; Field Strength: 3V/m; Amplitude 80% AM (1kHz) | IEC 61000-4-3 ( Criterion A) |
| **Immunity to Conducted Disturbance (CS)** | Freq: 0.15 MHz ~ 80 MHz , Field Strength: 3V/m, Amplitude modulation: 80% AM (1kHz) | IEC 61000-4-6 ( Criterion A) |
| **Fast Transient / Burst** | ± 2kV , Repeat frequency:5KHz & 100KHz | IEC 61000-4-4 ( Criterion A) |
| **Surge** | Line-Line: 1 KV, Line-Earth: 2KV | IEC 61000-4-5 ( Criterion A) |
| **Conducted Emission (CE)** | Class B | CISPR22; EN55022; GB9254 |
| **Radiated Emission (RE)** | Class B | |

**Specifications subject to change without notice.*

| ENVIRONMENTAL | | | | | |
|---|---|---|---|---|---|
| **Parameter** | **Min** | **Typ** | **Max** | **Unit** | **Remark** |
| **Operating Temperature** | -40 | | 70 | °C | Need to mount a heat-sink, the temperature of the heat-sink cannot exceed 65°C |
| **Storage Temperature** | -40 | | 85 | °C | |
| **Relative Humidity** | 20 | | 95 | % | Non-condensing |
| **Storage Relative Humidity** | 5 | | 95 | % | Non-condensing |
| **Altitude** | | | 5000 | m | For 3000-4000m, operating temperature decrease 1°C for every increase of 200m |
| **Cooling** | | | | | Natural conduction heat dissipation |
| **Vibration** | Freq: 10Hz~55Hz (Sinusoidal), Amplitude: 0.35 mm | | | | |
| **Shock** | Acceleration: 150 $m/s^2$, Duration: 11 ms | | | | |
| **Impact (Collision)** | Collision waveform: half sine wave; Acceleration: 180m/s2; Pulse Width: 6ms; 6-phase, impact 100 times | | | | |
| **Static Pressure Test** | TL=Wt*(S-1 )*F*9.8(N)<br>TL: Applied pressure, Unit: N: Wt: Package weight. Unit:kg: S: Allow stacking layers, select the maximum stacking layers; F: Safety factor, usually select 5: Duration: $2h_o$ | | | | |
| **Moisture Proof** | GB/T2423.4-1993 Alternating damp heat experiment, 24~45°C, 95%RH, 48h | | | | |
| **Anti-Mold** | GB/T2423.16-1999 Mold test, level 2 | | | | |
| **MTBF** | ≥150,000h | | | | |
| **MECHANICAL** | | | | | |
| **L x W x H (mm)** | 196 x 50 x 26 | | | | |
| **Weight (Kg)** | 0.4Kg | | | | |

| PIN DEFINITION | | | |
|---|---|---|---|
| **Input Terminal** | **Description** | **Pin Function** | **Maximum Torque** |
| | AC Input | L | 0.5N.M |
| | AC Input | N | |
| | Protective Earth | PE | |
| **Output Terminal** | Output Positive | V+ | 0.8N.M |
| | Output Positive | V+ | |
| | Output Negative | V- | |
| | Output Negative | V- | |
| **Current Sharing Signal Terminal** | Current Sharing Bus | S+ | NA |
| | Signal Ground (Output Ground) | GND | |
| | Power Supply Status Indication Signal | PG | |

**Specifications subject to change without notice.*

## PACKAGING AND SHIPPING

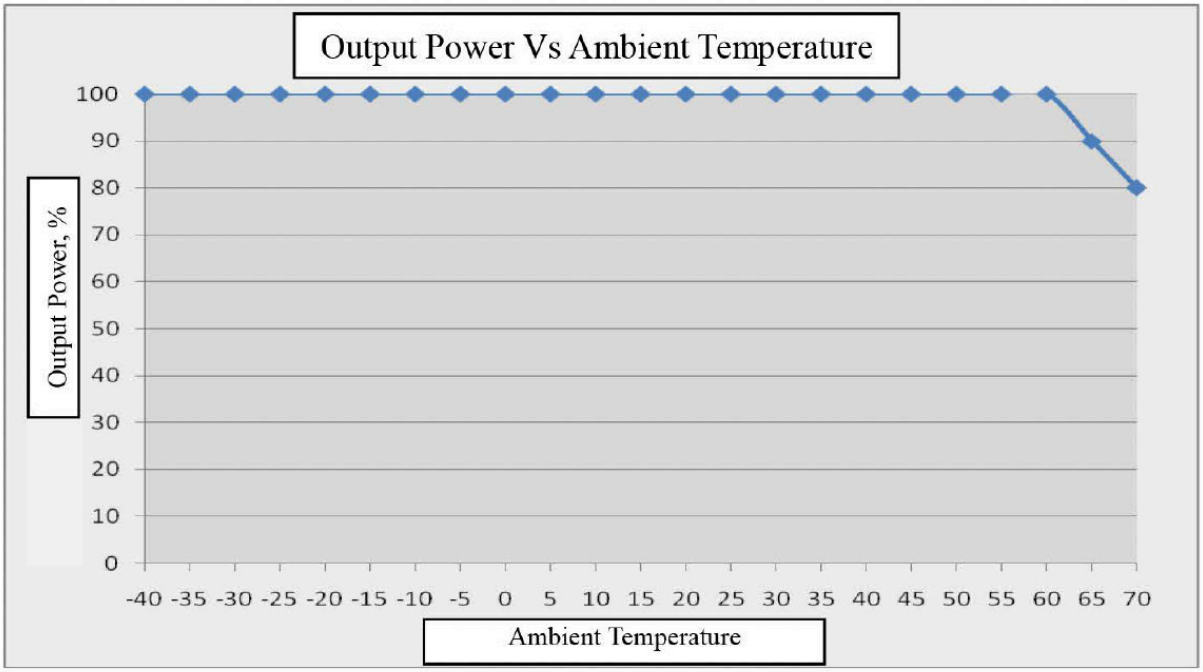
JE ships FOB Origin from the Anaheim, CA factory or our other subsidiary facilities.

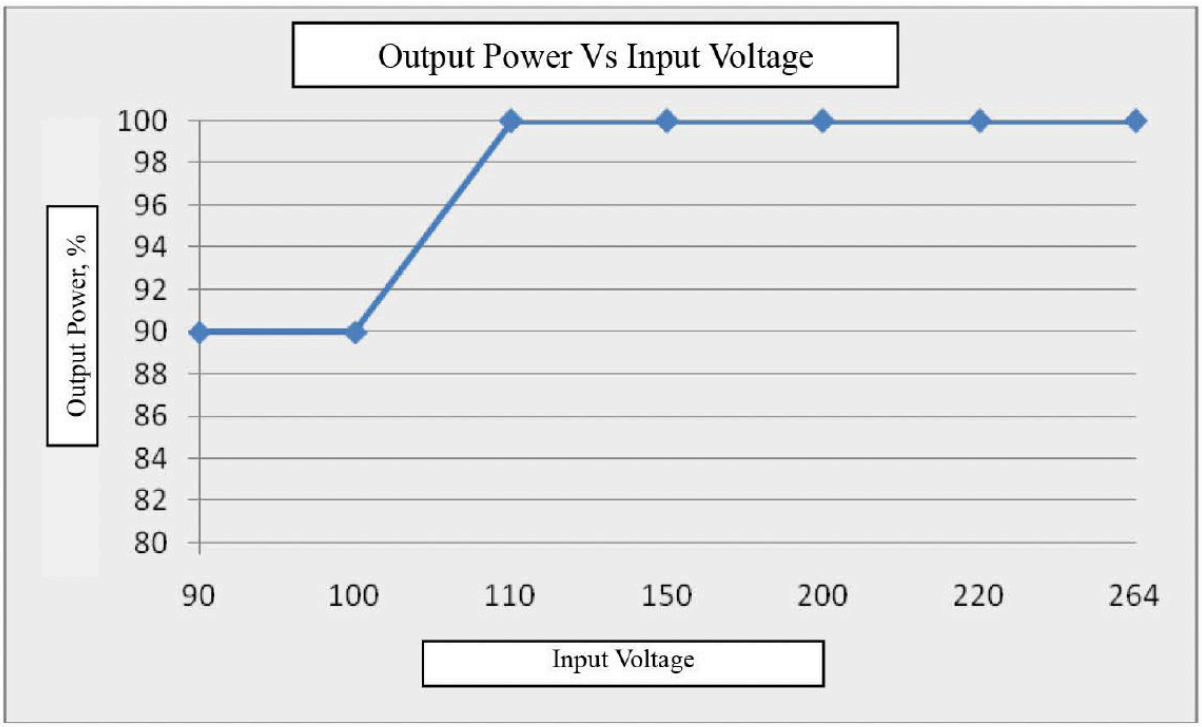
## LIMITED WARRANTY POLICY

All Jasper Electronics (JE) standard GPAD model power supplies and products are guaranteed to be free of defects in workmanship and materials for a minimum of three (3) years from the date of original shipment, when operated within specification. Non-standard (custom) power supplies and products may be warranted on an individual basis. The unused portion of this warranty is fully transferable with the original equipment in which the power supply is installed. Please see our website for full warranty statement.

## DERATING CURVE

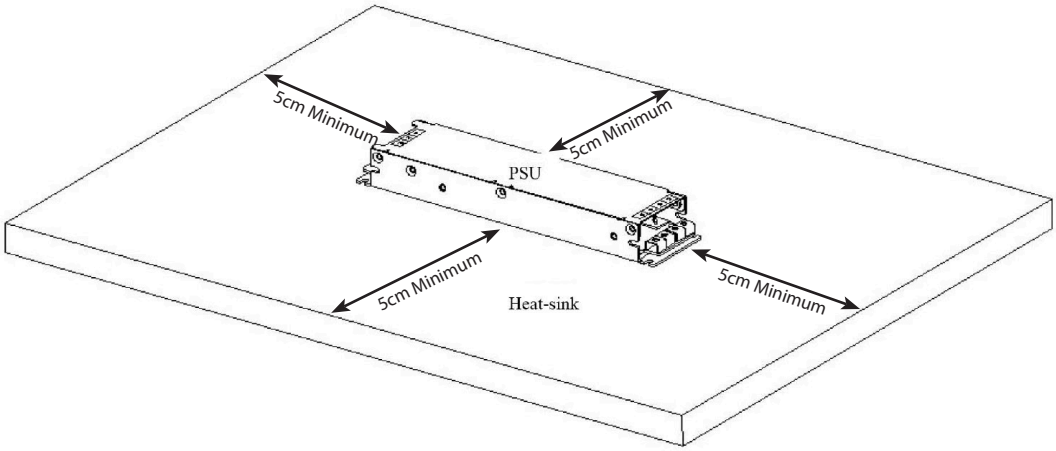
*Output Power vs Ambient Temperature & Input Voltage is as follows:*



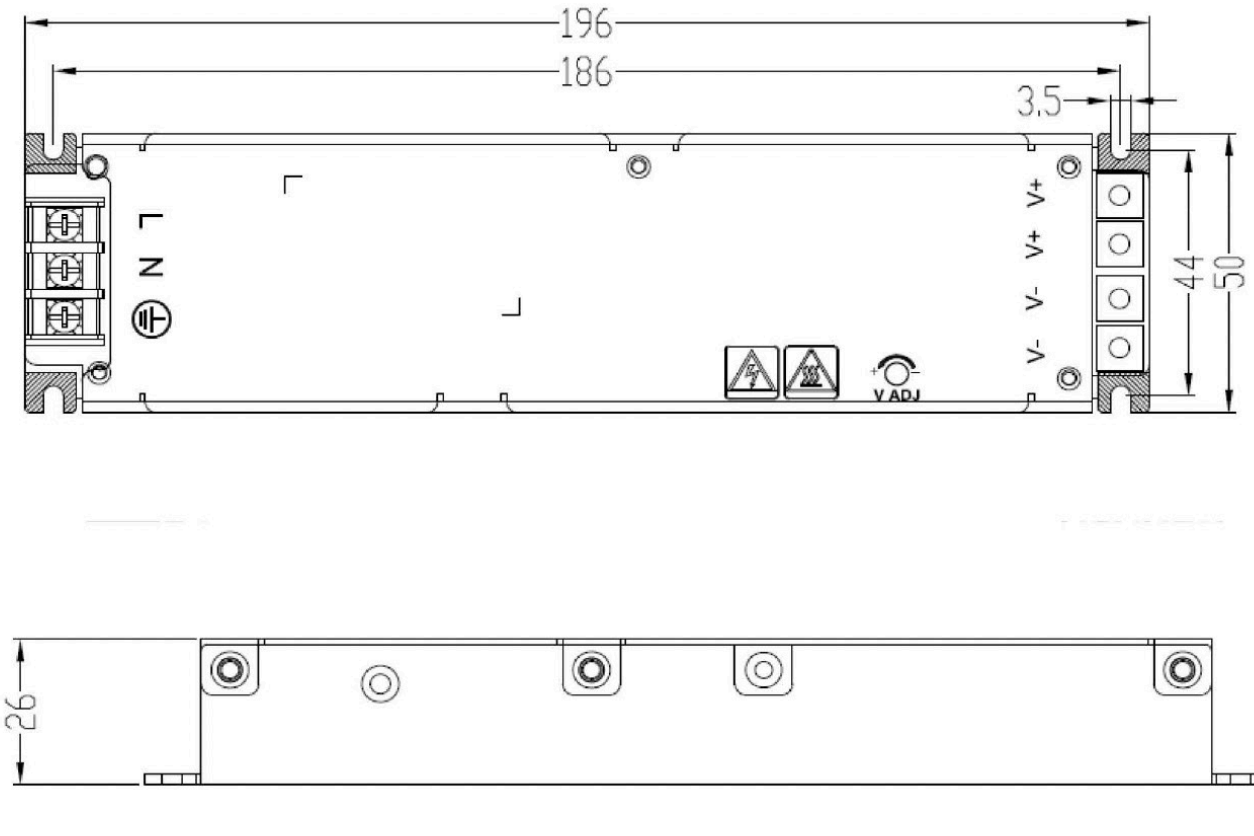



## CONVECTION vs. CONDUCTION CONFIGURATION

In stock form, Jasper GPAD Supplies dissipate heat by natural convection. The factory recommends that conduction cooling be used for applications with ambient temperatures in excess of +50°C. For conduction cooling, please ensure that there is a heatsink (or casing) at the bottom of the power supply, and that its surface is smooth. The heatsink / casing surface must be sealed to the bottom of the power supply by adding thermal compound or silicone oil. In some applications, the GPAD supplies are mounted to liquid cooled metallic cold plates to remove heat. Generally, the recommended heatsink size is 400mm x 300mm x 20mm (L x W x H). Note: If the recommended external heat dissipation conditions are not met, the unit may shut down to protect itself against overheating. Please reduce the load accordingly in order to prevent an overheating condition.



## GPAD MECHANICAL OUTLINE



Jasper Electronics

# INNOVATIVE SPECIALTY DC POWER SYSTEMS

## *Standard and Custom Power Supplies from 5W to 10KW*

### TRAFFIC CONTROL POWER SUPPLIES

- 70-400+ Watts / 120 and 220 VAC Models Available
- CALTRANS TEES, NYSDOT, CDOT, GDOT Compliant for 332, 334, 336, 342, 344, and 346 Series cabinets
- RoHS and NEMA Compliant
- Custom labeling and barcoding available
- Ruggedization against shock / vibration / humidity available

### CUSTOM POWER DISTRIBUTION ASSEMBLIES (PDAs)

- Compliant with TEES 2020
- 1U smaller than the PDA2-LX and PDA3-LX
- User accessible slots as specified
- Custom labeling and barcoding available
- Ruggedization against shock / vibration / humidity available

### COMPACT PCI

- AC or DC input, 175W - 500W DC output, active PFC
- 3U x 8HP, 6U x 8HP sizes
- PICMG 2.11 compliant, UL/CSA, NEMKO/TUV/CE certified, ROHS compliant
- Ruggedization against shock/ vibration/ humidity optional

**Primary Applications: Industrial Computing, Military, Satellite Comm, Test, Transportation, Telecom, Aerospace**

### SPECIALTY HOT-SWAPPABLE POWER SUPPLIES

- 200-1500W, Universal Input, 5-54VDC Output
- Hot Swap. N+1, 90+% Efficiency
- 1U Form Factors
- 30+ Variations for Various Applications Including Nuclear
- Ruggedization against shock/ vibration/ humidity optional

**Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics**

### RACK POWER SYSTEMS

- 200W-1500W, 2-8 slots, single or mixed output voltages, up to 10KW total
- Single, dual, or individual unit AC or DC input
- Internally or externally redundant DC outputs
- Standard 19" and 23" size or user-specified configurations also available
- Ruggedization against shock/ vibration/ humidity optional

**Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics**

### CUSTOMS & MODIFIED STANDARDS

- 75W-2KW
- Single to 7 outputs
- Designed and built to custom or semi-custom specifications
- Ruggedization against shock/ vibration/ humidity optional
- Custom electrical specs, chassis, paint, labeling, connectors, interface all available

**Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics**

### LOW NOISE CONVECTION / CONDUCTION COOLED POWER SUPPLIES

- 200W-500W, 90—264VAC full range input with 12-54 VDC Output
- Wide operating temperature range / high efficiency
- Small form factors
- Ruggedization against shock/ vibration/ humidity optional

**Primary Applications: Medical Equipment, Military, IT, Sensitive Electronics**

### MEDICAL ADAPTERS

- 6W-250W, Efficiency levels V & VI
- Desktop, Wall-mount, and Interchangeable AC plug types
- Large selection of output connectors – additional cable lengths available
- UL60601 (medical) approved adapters available
- Ruggedization against shock/ vibration/ humidity optional

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