Datasheet

**RS PRO Class I DeskTop Power Supply**

RS stock No: 144-0989

Output: 24V/5A
Index

1. General Description
2. Input Electrical Specification
3. Output Electrical Specification
4. Reliability Specification
5. Environmental Specification
6. Safety Specification
7. Mechanical Specification
1-0. General Description
The purpose of the document is to specify a Single phase AC input, single output
switching power supply. This specification is suitable for: EA11012M Series
This product is AC to DC switching power transfer device, it can provide
for a 24V, 5A max & 120W max DC output with constant voltage source.
This Specification defines the input, output, performance characteristics, environment,
noise and safety requirement for a power supply.

2-0. Input Requirements
2-1. Input Voltage
   Rated Voltage 100-240 Vac +/- 10% full range.
   Normal line input 115Vac/60Hz, 230Vac/50Hz.

2-2. Input Frequency
   47–63 Hz

2-3. Input Current
   a. 1.5A(Max.) @ 115Vac input with full load.
   b. 0.75A(Max.) @ 230Vac input with full load.

2-4. Energy saving standards:
2-4-0. Designed to meet the following standard :
   DoE level VI
2-4-1.Efficiency
   Efficiency \(\geq 88\% \) ( avg. ) normal input & 25%, 50%, 75%,100% of max output load
2-4-2 No Load Power Consumption.
   No Load Watt \(\leq 0.21\) W at normal line input.

2-5. Configuration
   2-wire AC input (Line , Neutral)

2-6. Input Fuse
   The hot line side of the input shall have a fuse, rating (3.15A/250V)
2-7. Inrush Current
   ≦ 60A at 110 Vac  At cold start, maximum load.
   ≦ 120A at 220 Vac  At cold start, maximum load.

2-8. Line Regulation
   This line regulation is less than ±1%, of rated input voltage @ full load.

2-9. Hold Up Time
   ≥ 10 mSec., @ Normal line, with full load.

2-10. Rise Time
   ≤ 50 mSec., @ 100-240VAC input, with full load from 10% to 90% of output voltage.

2-11. Turn-ON Time
   The output voltage should rise to 90% of rated output voltage in less than 3 SEC.
   from AC apply to 110Vac start up.

2-12. Harmonic Standard and Power Factor
   The adapter complied with IEC 61000-3-2 class D harmonic standard while input power
   over than 75W. The P.F. shall >0.95 @100Vac input and >0.9 @240Vac input.

3-0. Output Requirements
3-1. Output Voltage and Current

<table>
<thead>
<tr>
<th>Output Voltage (Vdc)</th>
<th>Current Min.(A)</th>
<th>Current Max.(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+24V</td>
<td>0</td>
<td>5A</td>
</tr>
</tbody>
</table>

3-2. Load Regulation

<table>
<thead>
<tr>
<th>Voltage (Vdc)</th>
<th>Tolerance (%)</th>
<th>Voltage range(Vdc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+24V</td>
<td>+5/, -5</td>
<td>22.8V—25.2V</td>
</tr>
</tbody>
</table>

3-3. Dynamic Load Regulation
   ±5% excursion for 50% - 100% or 100% - 50% load change of DC output at
   any frequency up to 1KHz(duty 50%)
3-4. Ripple & Noise

The power supply shall not exceed the following limits on the indicated voltage for 60Hz or 50Hz ripple, Switching frequency ripple and noise and dynamic load variations measured with a 20MHz bandwidth

<table>
<thead>
<tr>
<th>Output</th>
<th>Ripple/Noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>+24V</td>
<td>1.5% max. of rated output voltage</td>
</tr>
</tbody>
</table>

Input condition: for rated voltage, Output condition: for max load
Ripple / Noise: 60Hz ripple + switching ripple and noise
Ripple & Noise are measured at the end of output cable which are added a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor.

3-5. Over Voltage Protection

150% Max. of rated voltage.
The output voltage shall be shutdown and latch-off when OVP occurred.

3-6. Over Current Protection

110%-150% of rated output current.
The adapter can withstand continuous short at DC output and no damage.
It will enter into normal condition if the fault condition is removed.

3-7. Stability

2% Max. at constant load with constant input (after 30 minutes of operation).

3-8. Temperature Rise

Less than 45°C on top/bottom case at normal AC input & 80% load of DC output at environment temperature 25°C.

3-9. Drop-out (Power Line Disturbance)

Output voltage shall remain within the specified regulation range, through the absence of a line input during 1/2 cycle, at full load and normal AC line input.

3-10. Voltage Isolation

The DC ground will be isolated from the AC neutral and AC line.
4-0. Reliability

4-1. MTBF (MIL-HDBK-217F)

The power supply shall be designed and produced to have a mean time between failures (MTBF) of 100,000 hours at 25 degrees C.

5-0. Environment

5-1. Temperature
   a. Operating: 0 to 40 °C
   b. Storage: -20 to 85 °C

5-2. Humidity
   a. Operating: 10% to 90%
   b. Storage: 5% to 90%

5-3. Altitude

From sea level to 5,000 Meter (operation) and 5,000 Meter (non-operation).

6-0. Safety

6-1. Hi-Pot Test

3000Vac 5mA 2 Sec between primary and secondary circuit

6-2. Insulation Test

500Vdc, 3Sec. between primary and secondary circuit
IR should \( \geq 50 \, \text{M} \Omega \).

6-3. Leakage Current

\( \leq 250\, \text{uA at 240Vac/50 Hz} \)

6-4. Safety

UL, CUL, TUV/GS, CB, CE, FCC, RCM, ARGENTINA, CCC, PSE, CU, BSMI
6-5. EMS

<table>
<thead>
<tr>
<th>Items</th>
<th>Specification</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESD</td>
<td>Contact: ± 4KV</td>
<td>IEC 61000-4-2</td>
</tr>
<tr>
<td></td>
<td>Air: ± 8KV</td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>Frequency: 80~1000MHz</td>
<td>IEC 61000-4-3</td>
</tr>
<tr>
<td></td>
<td>Field Strength: 3V/M · 80% AM(1KHz)</td>
<td></td>
</tr>
<tr>
<td>EFT</td>
<td>1.0 KV on input AC power ports.</td>
<td>IEC 61000-4-4</td>
</tr>
<tr>
<td>SURGE</td>
<td>Line to Line: ± 1KV (peak)</td>
<td>IEC 61000-4-5</td>
</tr>
</tbody>
</table>

6-6. EMI

<table>
<thead>
<tr>
<th>Comply with Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISPR 32, EN 55032 Class B</td>
</tr>
</tbody>
</table>

7-0. Mechanical Characteristics

7-1. Physical Size: 137mm (L) * 59 mm (W) * 34 mm (H)

7-2. Enclosure material: 94V-0 minimum

7-3. Output Cable (Reference): UL2464 #16

7-4. Vibration Test

The vibration frequencies are set at 20Hz, with total amplitude of 1.5mm along the 3 directions namely X-Y-Z. The each direction should be vibrated for 60 minutes, after testing no abnormal electrical or mechanical should occur.

7-5. Drop Test (Referencing to CSA C22.2 No.950/UL1950/UL1310/EN60950)

Products shall be dropped from a height of 900 mm onto a horizontal surface consists of hardwood at 13mm thick, mounted on two layers of plywood each 19mm to 20mm thick, all supported on a concrete or equivalent non-resilient floor. Upon conclusion of test, the equipment need not be operational.

7-6. Net Weight (Reference): 450 g
### 条码扫描内容为：1440989

1. 材质：铜版纸
2. 颜色：白底黑色+红色
3. 公差：±0.1
4. UL编号：
5. 出货检验报告：有
6. 条码类型：128码
7. 其他：*标示为重点检验尺寸

<table>
<thead>
<tr>
<th>品名 (DESCRIPTION)</th>
<th>标签 (TICKET)</th>
<th>订单号 (ORDER NUMBER)</th>
<th>核准 (APPROVED BY:)</th>
<th>日期 (DATE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>144-0989</td>
<td>31110126</td>
<td>WUJiang Packing Material Co., Ltd.</td>
<td>彭美贞</td>
<td>2017/07/18</td>
</tr>
<tr>
<td>5211012M-24-RS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made in China</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

备注：
17/29=yy/ww
(制造年/周期)

![Pantone 485C](image)

- 74mm x 55mm
- 彭美贞
- 17/29=yy/ww
- (制造年/周期)
- Pantone 485C

----------

**Supplied By**

![IDEAL POWER](image)