
SPECIFICATION

产品规格书

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Model No.: MANG065

Description: POWER SUPPLY SPECIFICATION

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修订履历

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Part 1

1. Electrical Specification 电气规格:

1.1 Table 1 Input Electrical Characteristics (输入特性)

Input voltage range 输入电压	90Vac to 264Vac
Normal voltage range 标称输入	100Vac to 240Vac
Frequency range 频率范围	50Hz/60Hz $\pm$ 5%
Max input ac current 最大输入电流	2.0A max at full load condition
Inrush current (cold start) 浪涌电流	70 Amperes @ 230Vac / 50Hz input
Average Efficiency 效率	$\geq$ 87%min (25%, 50%, 75%, and 100% load with input AC voltage of 115Vac @ 60Hz and 230Vac @ 50Hz.)
Leakage Current 泄漏电流	Less Than 0.1mA, 240Vac input
Standby Power Consumption 待机功耗	$\leq$ 0.5W At 240Vac input and no load condition
Input Fuse 输入保险	T3.15AH/250Vac

1.2 Output Electrical Characteristics (输出特性)

1.2.1 Table 2 Output Voltage & Current Regulation (输出电压电流调整率)

Output Voltage 输出电压	Regulation 调整率	Min. current 最小电流	Rated current 额定电流	Peak current 峰值电流
+12V	$\pm$ 5%	0A	5A	
+15V	$\pm$ 5%	0A	4A	
+19V	$\pm$ 5%	0A	3.2A	
+24V	$\pm$ 5%	0A	2.5A	-

Note:* The testing of peak current shall be performed under other dc output load rating and the peak current pulse width within 100ms conditions.峰值电流的测试条件是其它负载为额定负载，且脉宽小于 100 毫秒。

When 12v is tested(power test only),testing shall be performed with rated load current of 12v firstly, and then with load current of inverter.+12V 在测试时（仅限 Power 测试），先带+12v 的额定负载电流，后带 inverter 的负载电流。

1.2.2 Table 3 DC Output Ripple & Noise. （输出纹波和噪声）

Output Voltage	Ripple & Noise (Max.)
+12V	120mVp-p@25℃
+15V	150mVp-p@25℃
+19V	190mVp-p@25℃
+24V	240mVp-p@25℃

Note: 1)Ripple & Noise test: Ripple & Noise bandwidth is set to 20MHz.

纹波和噪声测试：纹波和噪音带宽设置在 20 兆赫兹。

2)Use a 0.1uF ceramic capacitor in parallel with a 470uF electrolytic capacitor at output connector terminals for ripple & noise measurements.

输出端并联一个 0.1uF 的陶瓷电容和一个 10 uF 的电解电容来测试纹波和噪声。

1.2.3 Output Transient Response. （输出动态响应）

Table 4. Test condition.测试条件

Voltage Tolerance Limit	Slew Rate	Load Change
+12V/5%	0.2A/uS	Min. to 50% load and 50% to Max load
+12V/5%	0.2A/uS	Min. load to Max load
+15V/5%	0.2A/uS	Min. to 50% load and 50% to Max load
+15V/5%	0.2A/uS	Min. load to Max load
+19V/5%	0.2A/uS	Min. to 50% load and 50% to Max load
+19V/5%	0.2A/uS	Min. load to Max load
+24V/5%	0.2A/uS	Min. to 50% load and 50% to Max load
+24V/5%	0.2A/uS	Min. load to Max load

Note: Load change repetition rate: 50Hz to 100Hz . 跳变负载频率:50~100Hz.

1.2.4 Table 5 Hold-Up Time （输出保持时间）

Output	120Vac input	220Vac input
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Voltage		
+12V	≥10 mS	≥10 mS
+15V	≥10 mS	≥10 mS
+19V	≥10 mS	≥10 mS
+24V	≥10 mS	≥10 mS

Note: All of dc output at full load. 所有输出带满载。

1.2.5 Table 6 DC Output Overshoot During Turn-On & Turn-Off (输出超调)

Output Channel	Output(V)	Overshoot voltage(V)超调电压	
		Turn-on 开机	Turn-off 关机
+12V	+12V	≤5%	≤5%
+15V	+15V	≤5%	≤5%
+19V	+19V	≤5%	≤5%
+24V	+24V	≤5%	≤5%

Note: All of dc output current from Min. to Max. 测试时负载范围：最小到最大。

1.2.6 Table 7 DC output voltage rise time (输出上升时间)

Output Voltage	120Vac input &Full Load	220Vac input &Full Load
+12V	≤100 mS	≤100mS
+15V	≤100 mS	≤100mS
+19V	≤100 mS	≤100mS
+24V	≤100 mS	≤100mS

Note: The rise time measured is when the output voltages rise from10% to 90% of specified output voltage Vout observed on the channel waveform.

上升时间为输出电压从 10%上升到 90%的时间。

1.3 Protection (保护功能)

1.3.1 Table 8 DC Output Over current Protection (输出过流保护)

Output Voltage	Over Current	Comments
+12V	≥5.8A _{typ} *	Hiccup 保护后重起
+15V	≥4.6A _{typ} *	Hiccup 保护后重起
+19V	≥3.6A _{typ} *	Hiccup 保护后重起
+24V	≥2.9A _{typ} *	Hiccup 保护后重起

Note:The over current protection should be tested at other load rating.

过流保护测试是在其它额定负载时测试。

1.3.2 Table 9 DC Output Short Circuit Protection (输出短路保护)

Output Voltage	Comments
+12V	Hiccup 保护后重起
+15V	Hiccup 保护后重起
+19V	Hiccup 保护后重起
+24V	Hiccup 保护后重起

Note: The Short Circuit protection should be tested at other load rating.

短路保护测试是在其它额定负载时测试。

2. Isolation (绝缘性能)

2.1 Table 10 (绝缘阻抗)

Input To Output	DC500V 50M Ω min (at room temperature)
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2.2 Table 11 (绝缘耐压)

Input To Output	3000Vac 50Hz 1minute $\leq$ 10mA
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Note: Open FG and Output return. 交流地和输出负极要断开。

3. Safety (安全规格)

The power supply shall comply with the following criterion:

电源安全性满足下列标准:

- 1) UL60950/UL60065
- 2) EN60950/EN60065
- 3) GB4943-1995/GB8898-2001

4. EMC (电磁兼容性)

4.1 EMI (电磁干扰)

The power supply shall comply with the following criterion:

电源电磁干扰满足下列标准:

1) Conduction Emission : (传导干扰度)

*EN55013/EN55022, CLASS B

*GB13837-2003, CLASS B

*CISPR13:2001/FCC PART15 CLASS B

2) Radiated Emission : (辐射干扰度)

*EN55013/EN55022, CLASS B

*GB13837-2003, CLASS B

*CISPR13:2001/FCC PART15 CLASS B

Note : The power board should be assembled in customer product to test for passing the above criterion.需配合用户电路整机通过上述标准。

4.2 EMS (电磁抗扰)

The power supply shall comply with the following criterion:

电源电磁抗扰满足下列标准:

1) ESD (静电抗扰度)

*GB17626.2-1998/IEC61000-4-2 Lever 3

2) EFT (脉冲群抗扰度)

*GB17626.4-1998/IEC61000-4-4 Lever 3

3) SURGE (雷击浪涌)

*GB17626.5-1998/IEC61000-4-5 Lever 3

4) DIP (电压跌落)

*GB17626.11-1998/IEC61000-4-11 Class B/C

5. Environmental Requirement (工作环境)

5.1 Temperature (环境温度)

* Operating 工作温度: -10℃ to +40℃.

* Storage 存储温度: -20℃ to +80℃.

5.2 Humidity (环境湿度)

* Operating 工作: From 10%to90% relative humidity (non-condensing).

* Storage 存储: From 5 to 95% relative humidity (non-condensing).

5.3 Altitude (海拔高度)

* Operating: to10,000 ft.

* Storage: to 20,000ft.

5.4 Cooling Method (冷却方式)

* Ventilation cooling . 风道自然冷却

5.5 Vibration (振动耐受)

* 10-55Hz, 19.6m/s²(2G), 20minutes each along X, Y and Z axis.

5.6 Shock (冲击耐受)

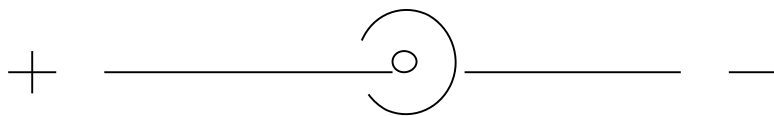
* 49m/s²(5G),11ms, once each X, Y and Z axis.

6. Dimension (物理尺寸)

*126 mm X 62mm X 18mm(面高) (长 L *宽 W * 高 H).

7. Weight (重量) 170g

8. Plug Connection (插头极性定义)



9. Top View



10.Bottom ViePart II

1. General Description

This AC-DC Adapter with high performance is designed for LED display. It features low consumption, mini shape.

2. Application

This AC-DC Adapter can be available in all kinds of LED display.

3. Environment Requirement

Operating Temperature : -10℃ -- 40℃

Storage Temperature : -20℃-- 80℃

Operating Humidity: 10% -- 90%RH

Storage Humidity : 10% -- 90%RH