



深圳市极致电效科技有限公司

隔离 AC-DC 模块

MP130S-24-ABC 产品规格书

产品型号: MP130S-24-ABC

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1. PRODUCT OVERVIEW 产品概要

- 宽范围的输入 *Wide Input voltage range*
- 主动性功率因数校正 *APFC*
- 高效率 *High Efficiency*
- 结构紧凑 *Compact structure*

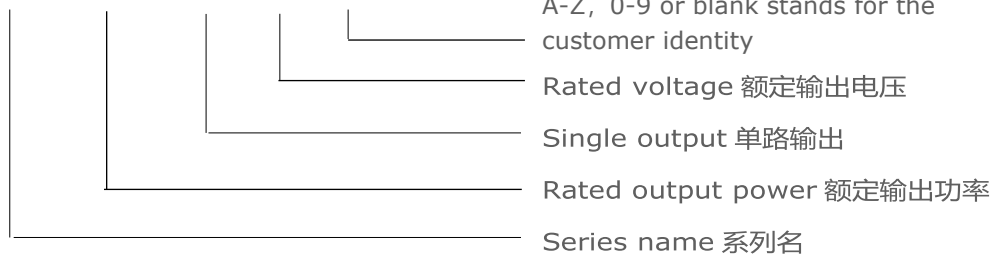
1. Picture(实物图片)



图表 1-1 Profile picture 外形图片

2. MP130S-24-ABC 命名:

MP-130- S- 24- ABC



2. ELECTRICAL SPECIFICATION 电气规格

1.1. INPUT ELECTRICAL CHARACTERISTICS (输入特性)

表格 2-1 INPUT ELECTRICAL CHARACTERISTICS 输入特性

No. 编号	Electrical Characteristics 电气特性	MP130S-24
1.1.1	Input voltage range 输入电压 1)	(85) 90Vac to 264Vac
1.1.2	Normal voltage range 标称输入	100Vac to 240Vac
1.1.3	Frequency range 频率范围	47Hz--63Hz
1.1.4	Max input ac current 最大输入电流	1.8 Arms max. at full load condition@115Vac
1.1.5	Inrush current (cold start) 浪涌电流	60A typ. peak, 115Vac; 120A typ. peak, 230Vac
1.1.6	Power Factor 功率因数	0.98 min. @100Vac 60Hz Full load 0.90 min. @240Vac 50Hz Full load
1.1.7	Standby Power Consumption 待机功耗	≤0.21W@230Vac/50Hz
1.1.8	Efficiency (115/230Vac, full load) 效率 (Typ.)2)	92% /94%
1.1.9	Average Efficiency 平均 效率 (Min.) 2) 3)	89.5%
1.1.10	Earth Leakage Current (NC)	Less Than 0.15 mA, @ 264Vac/60Hz input

	对地漏电流	
	Touch Current (NC) 可接触电流 (NC)	Less Than 0.10 mA, @ 264Vac/60Hz input
1.1.11	Earth Leakage Current (SFC) 对地漏电流	Less Than 0.3 mA, @ 264Vac/60Hz input
	Touch Current (SFC) 可接触电流(SFC)	Less Than 0.2 mA, @ 264Vac/60Hz input
1.1.13	Input Fuse 输入保险	T3.15A/250Vac, Both Lines

Note 注明:

- 1) The power supply must be able to start up under rated loading at 85 VAC. 在 85Vac 输入的条件下, 电源能够带额定功率起动。
- 2) Efficiency was tested at the output mating connector terminal。测量输出插头对应插座端子处的效率。
- 3) Input Voltage 输入电压: 115Vac/60Hz, 230Vac/50Hz; Load 负载: 25%, 50%, 75%, 100%

1.2. OUTPUT ELECTRICAL CHARACTERISTICS (输出特性)

表格 2-2 OUTPUT ELECTRICAL CHARACTERISTICS (输出特性)

No. 编号	Electrical Characteristics 电气特性	MP130S-24
1.2.1	Rated Output Power 额定功率	100W @ 90Vac-264Vac, Convection cooling; 130W @ 90Vac-264Vac, Forced air cooling (10CFM)
1.2.2	Output Voltage 输出电压	24V
1.2.3	Min. Rated Current 最小额定输出电流	0A

1.2.3	Max. Rated current @Convection cooling 最大额定输出电流 (自然冷)	5A
1.2.4	Max. Rated current @ Forced Air 最大额定输出电流 (风冷)	5.41A
1.2.5	Voltage Regulation 电压调整率	Line Regulation: $\pm 0.5\%$; Load Regulation: $\pm 2\%$; Total Regulation: $\pm 3\%$
1.2.6	Output Ripple & Noise. 输出纹波和噪声 2)	1% of output voltage (peak to peak)
1.2.7	Output Transient Response. 输出动态响应	$\pm 5\%$ of output voltage; Step load: 5%-50% or 50-100%, Slew rate 1A/uS, repetition rate 跳变频率: 100Hz.
1.2.8	Startup Time 启动时间 3)	$\leq 2S$ @ 100Vac input, 25°C
1.2.9	Hold-Up Time 输出保持时间	20mS @115Vac/60 Hz
1.2.11	Output Overshoot During Turn-On & Turn-Off 输出超调	5% of V_o ;
1.2.12	Output voltage rise time 输出上升时间 4)	$\leq 30mS$

Note:

- 1) Maximum peak load duration is 1s, maximum duty cycle is 10%
- 2) 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。
Use a 0.1uF ceramic capacitor in parallel with a 10 uF 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 10uF 的电解电容来测试纹波和噪声。

- 3) The startup time measured is when AC power on to 90% of specified output voltage observed on the channel waveform. 开机时间为 AC 上电到输出电压 90%的时间。
- 4) 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. GENERAL SPECIFICATION (通用特性)

表格 2-3 GENERAL SPECIFICATION (通用特性)

No. 编号	Item 项目	MP130S-24- abc
1.3.2	CFM @ Forced air 风流量	10CFM
1.3.3	MTBF	500KHrs, Full load, 25°C

1.4. PROTECTION (保护功能)

表格 2-4 PROTECTION (保护功能)

No. 编号	Protection Item 保护项目	MP130S-24
1.4.1	Output Over Current Protection 输出过流保护	>=5.6A, =<8.0A
		Hiccup, Auto Recovery 自动重启
1.4.2	Output Short Circuit Protection 输出短路保护	Hiccup, Auto Recovery 自动重启
1.4.3	Output Over Voltage Protection 输出过压保护 1)	>26.4V, <33.6V
		110-140% Latch off, Recycle input to recovery

1.4.4	Input Brown Out 输入欠压保护	AC On Voltage	AC Off Voltage	Minimum Hysteresis
		80Vac <=	>=55Vac	5Vac
1.4.5	OTP 过温度保护	Amb: >70oC		

Note: 1) The power supply shall restart after recycling input line. 进入锁机保护状态后，需要先断开 AC 电源放完电后，再重新上电，电源才能重新工作。

3. ISOLATION (绝缘性能)

2.1. INSULATION RESISTANCE (绝缘阻抗)

表格 3-1 INSULATION RESISTANCE (绝缘阻抗)

Input To Output	DC500V 50 MΩ min. (at room temperature)
Input To PE	DC500V 50 MΩ min. (at room temperature)
Output To PE	DC500V 50 MΩ min. (at room temperature)

2.2. DIELECTRIC STRENGTH (绝缘耐压)

表格 3-2 DIELECTRIC STRENGTH (绝缘耐压)

Input To Output	4000Vac 50Hz 1minute ≤ 5mA
Input To PE	1500Vac 50Hz 1minute ≤ 5mA
Output to PE	1500Vac 50Hz 1minute ≤ 5mA

Notes: Input line (L&N) should be shorted, and all output should be shorted. 输入线需要短接 (L&N) 在一起，所有的输出线需要短接在一起。

2.3. MEANS OF PROTECTION (保护类型)

表格 3-3 MEANS OF PROTECTION (保护类型)

Input To Output	2 X MOPP
Input To PE	1 X MOPP
Output to PE	1 X MOPP

4. 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:

- IEC 60601 - 1
- CE Mark

5. EMC (电磁兼容性)

The module shall meet the applicable requirements of IEC 60601-1-2:2014(4th Edition) and EN60601-1-2:2015 Medical electrical equipment - Part 1-2.

5.1. 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)

*EN55011, CLASS B

*FCC PART J15 CLASS B

2) Radiated Emission : (辐射干扰度)

*EN55011, CLASS B

*FCC PART J15 CLASS B

Note: We can work together with customer to modify the power and the system to meet above criterion.如果客户需要, 可以配合在客户整机上进行更改, 达到标准

3) Voltage Fluctuation & Flicker : (电压波动及闪烁)

* IEC61000-3-3

4) Harmonic Distortion: (谐波电流发射)

*IEC61000-3-2 Class A

5) Magnetic Fields: (磁场发射)

*FDA&MIL-461/462 RE101

5.2. 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) 判据: A

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

8KV contact discharges &15KV air discharges

2) EFT (脉冲群抗扰度) 判据: A

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

 ± 2 KV for input power port

3) SURGE (雷击浪涌) 判据: A

*GB17626.5-1998/IEC61000-4-5 Installation Class 3

4) DIP (电压跌落)

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

表格 5-1 电源DIP 电压跌落要求

跌落至	跌落时间	性能判据
0%Ut	0.5cycle	A
0%Ut	1cycle	B
70%Ut	25/30 cycles	B
0%Ut	300cycles	C

5) Conducted Immunity (传导抗扰度) 判据: A

*IEC 61000-4-6, 6Vrms; 0.15 – 80 MHz, AM 2 Hz (and/or 1 kHz) @ 80%.

In addition for life-support, 10 Vrms in ISM Bands between 0.15 – 80 MHz

6) Radiated Immunity (辐射抗扰度) 判据: A

*IEC 61000-4-3, 80 – 2700 MHz; 10 V/m; AM 2 Hz (and/or 1 kHz) @ 80%

7) Magnetic Fields Immunity (磁场抗扰度) 判据: A

*IEC 61000-4-8, 30 A/m, 50, & 60 Hz

A: 电源在整个测试过程中, 性能没有任何降低, 完全和电源规格书中规定的指标相同。

B: 测试过程中, 电源的性能允许暂时降低, 但测试结束后能够恢复正常。

C: 允许出现短时的功能丧失, 但测试结束能够自动或者人工干预下恢复正常。

R: 测试过程中不允许出现除保险器件外其它器件的损坏。

6. ENVIRONMENTAL REQUIREMENT (工作环境)

1. Temperature (环境温度)

* Operating 工作温度:

0°C to +40°C., derate output power by 2% per °C above 40°C, up to 70°C, for forced air cooling(10CFM Forced-Air Flow); derate output power by 2.5% per °C above 40°C, up to 70°C, for convection cooling;

* Storage 存储温度:

-40°C to +80°C.

2. Humidity (环境湿度)

* Operating 工作: From 10% to 90% relative humidity (non-condensing).

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

3. Altitude (海拔高度)

* Operating: -60 to 5000 m,

* Storage: up to 5000 m

4. Cooling Method (冷却方式)

* Convection cooled. 自然冷却

5. Vibration (振动耐受)

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

6. Shock (冲击耐受)

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

7. MACHINERY AND INTERFACE 外形与接口

3. Dimension (物理尺寸)

Outline dimension: W x L x H

50.8mm x 76.2mm x 25.4mm (2" x 3" x 1")

4. Weight (重量)

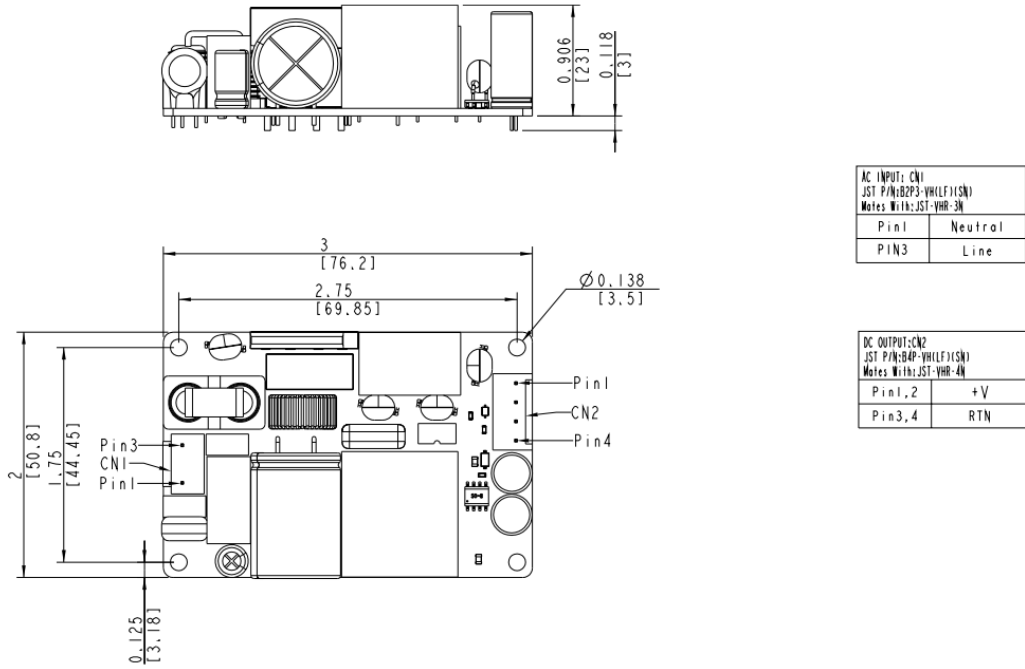
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5. Input Inlet and Output Cable & Pin Connection (连接器脚位定义)

表格 7-1 Input Inlet and Output Cable & Pin Connection (连接器脚位定义)

AC INPUT: CN1 JST P/N: B2P3-VH (LF)(SN) Mates With: JST-VHR-3N	
Pin 1	Neutral
Pin 3	Line
DC OUTPUT: CN2 JST P/N: B4P-VH (LF)(SN) Mates With: JST-VHR-4N	
Pin 1, 2	+V
Pin 3, 4	RTN

6. Physical Dimension (外形图尺寸)



图表 7-1 Physical Dimension (外形图尺寸) 单位 (mm)

7. Package (包装)

TBD

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