

PowerPax UK

Part number SW4010

12vdc 1 amp UK switch mode power supply

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1. Scope (适用范围)

This specification shall be applied to Voice、Picture、It is peaceful to defend to photograph、Supervise and control to wait the realm

本规格适用于音频,视频,安防摄像,监控等领域。

2. Quote Criterion (引用标准)

TUV/EN60065

UL&CUL/UL60065&CSA C22.2 NO. 60065

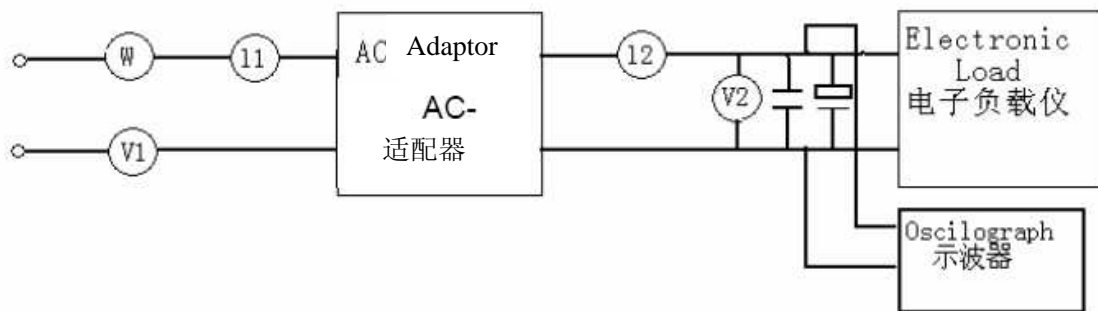
CB REPORT/IEC60065

3. Electrical Characteristic (电气特性)

Test Circuit (测试电路)

If the test is to be made on a specified circuit, be sure to use the following circuit.

(无特殊规定的情况下依照下面的电路进行测试.)



4. Input Characteristics (输入特性)

Rated Input Voltage (额定输入电压)

It is normal for **100Vac** to **240Vac** input AC voltage.

(额定输入交流100V~240V)

Input Voltage Range (输入电压范围)

The adaptor shall operate from **90Vac** to **264Vac** and the range switching is unnecessary.

(输入电压范围交流 90V~264V)

Rated Frequency (输入频率)

It is normal for **50Hz** or **60Hz** and single phase.

(输入频率50Hz/60Hz)

Frequency Range (输入频率范围)

The adaptor shall operate with an input frequency from **47Hz** to **63Hz**.

(输入频率范围47Hz~63Hz)

Steady AC Current (AC 输入电流)

Maximum steady state input current is **400mA (Max)** Measured at 90Vac input and maximum load.

(90V 满载时输入电流400mA (Max))

Peak Inrush Current (峰值输入电流)

With cold starting, the peak inrush current should less than **40A**.

(电源启动时最大峰值输入电流小于40A)

Efficiency (效率)

75% min. measured at 100Vac and 240Vac input voltage, maximum load and include the DC cable loss.

(在输入电压100Vac -240Vac, 输出最大负荷下, 适配器工作效率大于72%)

5. Output Characteristics (输出特性)

Rated Output Voltage (输出额定电压)

The rated output voltage is specified at **12.0V ± 0.6V**.

(额定输出电压范围12V ± 0.6V.)

Rated Output Current (额定输出电流)

The output current will be performed from **1000mA**

(额定输出电流1000mA)

Rated Power (额定功率)

This adaptor is capable to support **12Watts** continuously at all specified conditions.

Note: the test shall be made under the following conditions, unless otherwise specified:

Ambient Temperature 25°C, Relative Humidity 35~85%RH

Air Pressure 86~106kPa

(在无特别指定条件下, 测试温度为25°C、湿度为35~85%RH、气压为86~106kPa)

Output Ripple and Noise (输出纹波、噪音)

Output ripple voltage is less than 120mV p-p (I=1000mA) Measured methods:

Performed by 20MHz bandwidth in oscilloscope.

Applied 0.1uF ceramic capacitor and 10uF electrolytic capacitor across output connector terminals Measured at the end of DC cable.

(输出端并0.1uF 与10uF 电容, 限制示波器带宽20MHz 时, 测得纹波小于120mV p-p)

Protection (保护)

Over Voltage Protection (过压保护)

The adaptor will be automatically self-limited while any component(s) failure and output voltage will be tripped and protected below 15V±0.75V the adaptor can not work after the protection.

当元件失效或输出电压超过15V±0.75V 时, 适配器自动保护,保护后不可恢复)

Over Current Protection (过流保护) **Peak Load 最大电流**

Output current will be limited and less than 1000mA Min

Short Circuit Protection (短路保护)

The adaptor is protected that a short happened between the output terminals and shall not result in a fire hazard, any damage to this adaptor and will be normal operation automatically while the short is removed. The maximum short current is 3mA Max.

输出短路后不损坏该制品, 短路恢复正常输出, 输出短路电流2800mA Max)

Quiescent Consumption(空载功耗)

The Stand-by power of the adaptor shall be less than 0.3 Watts at the input voltage range of 100VAC to 240VAC.

6. Reliability Items (信赖性项目)

Electrostatic Discharge (静电)

At 150pF: 330Ω, for each point, 10 shots of direct discharge or air discharge. (1 MΩ/SHOT), have no malfunction. Direct discharge: ±6kV, Air discharge: ±10kV
(在接触放电±6kV 和空气中放电±10kV 模式下,各处分别放电10 次无误动作)

Hi-Pot Test (高压测试)

After AC 3000V1min between input plug-DC plug. cutoff current 5mA, the adaptor have no failures like damages, arch, insulation damage etc. (at 25° C)

(在25° C 环境下, AC 输入插头与DC 插头之间加AC3000V 1 分钟, 电流 5mA 最大, 充电器无损伤、电弧放电、绝缘破坏等异常。)

Insulation Resistance (绝缘电阻)

At 25° C after DC 500V 1min between input plug- DC plug, insulation resistance 100MΩ min)

(在25° C 环境下, AC 输入插头与DC 插头之间输入DC500V1 分钟后绝缘阻抗在100MΩ 以上)

Leakage Current (泄漏电流)

0.25mA maximum, at nominal AC input voltage and frequency

(额定交流输入时泄漏电流不得超过0.25mA)

Temperature Rise (温升)

At 25°C with the rated input 100-240Vac charged to the primary a rated load (I_{out}=1000mA)

on the secondary, every parts of the case surface rise 65°C or less.

(在常温25°C下输入端施加100-240Vac 电压, 输出1500mA 负荷的状态下, 外壳表面所有地方65°C 以下)

Continuous Working (连续工作时间)

With the rated voltage charged to the primary and output current 2000mA, after continuously

work 48 hours have no damage.

(在输入额定电压和输出电流2000mA 的条件下, 连续工作48 小时, 不损坏适配器。)

Mean Time Between Failure(平均无故障时间)

The adaptor shall be designed and produced to have a mean time between failures (MTBF)

of 50000 operating hours 90% confidence-level while operating under the following conditions:80% maximum load at 25°C,nominal input voltage.

Standard: MIL-HDBK-217F

(该适配器在25°C正常输入时,输出为80%最大负载,90%情况下其平均无故障时间为50000 小时)

EMC Standards (EMC 标准)

CE/EN55013&EN55020

FCC DOC/FCC Part15

7. Environmental Requirement (环境要求)

Operating Temperature (工作温度)

0°C TO 40°C

Storage Temperature (储藏温度)

-40°C TO +70°C

Operating Humidity (工作湿度)

35~95% RH. Non-condensing

Storage Humidity (储藏湿度)

5 ~ 95% RH. Non-condensing

8. Mechanical Requirement (机械要求)

Dimension (尺寸)

The nominal external dimensions of the power adaptor are 76mm * 43mm * 36mm

Weight (重量)

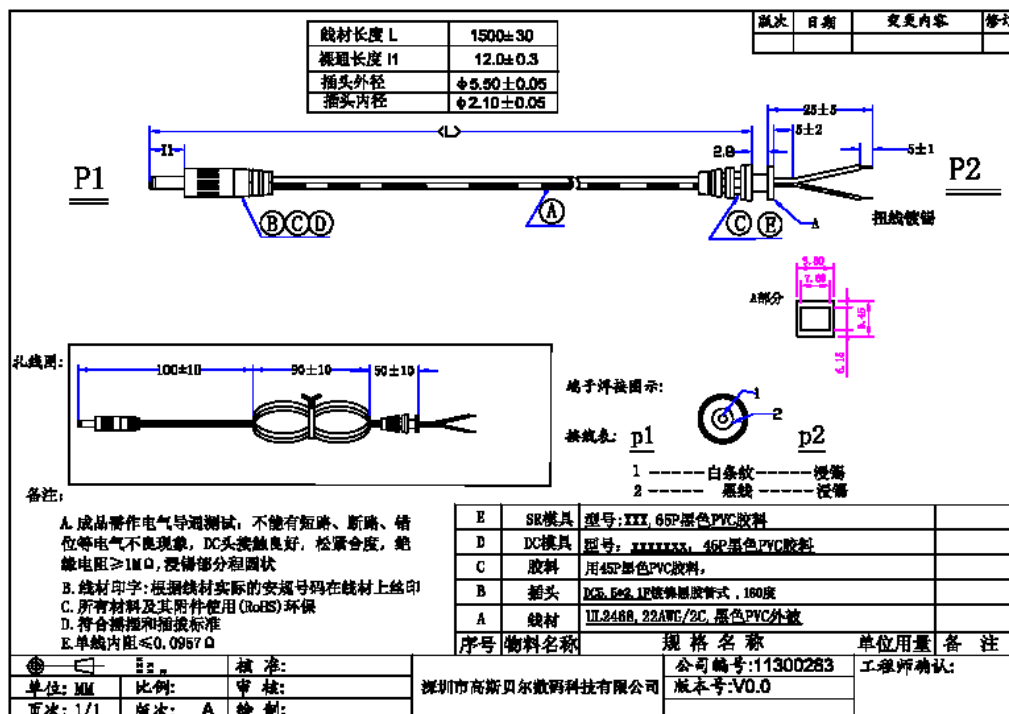
Weight are approx 110 g.

Input plug type (输入插头类型)

Wall-mount BS type (with holes) . 2 Conductors,

Output cable and DC Plug (输出线材与接口类型)

Plug: 2.1*5.5*12mm 2468 1500mm 22#



Vibration Test Requirement (振动试验)

Non-operating, with packing) Reference to IEC publ. 68-2-6

(在包装好不工作的情况下实验,具体参照IEC publ. 68-2-6 标准)

Test conditions (测试条件)		Acceptance Criteria (规格)
Frequency (振动频率)	10~55Hz	Nominal functional test should be satisfied after the test (不发生功能损坏的异常情况)
Sweep (振动方式)	2hours, For each axis(X,Y,Z)	
Acceleration (加速度)	0.6G 1.5G (5~50Hz, peak-peak)	
Displacement (振幅)	0.35 mm(5~50Hz)	

Bending Test (弯曲强度测试)

Fix the adaptor and its plug, apply a load of 300g to the other end, turn the cable by $\pm 60^\circ$ carry out this process 2000 times, at the rate of 20 times per minutes. No abnormality in mechanical and electrical characteristic and disconnection within 30% after the test.

(拉重负载: 300g, 弯曲强度: $\pm 60^\circ$, 次数: 2000 次, 频率: 20 次/分, 测试后性能无异常, 断线率30%以下)

Tensile Strength(拉伸强度)

Apply a load of 10N to the adaptor side and the connector side for 1 minute, no mechanical

damages or other failures, no electrical deterioration and other failures comparing to before test condition.

(对连接器端施加10N 1 分钟后与实验前状态比较, 没有机械破坏等, 且不出现电器性能损坏)

Drop Test (跌落试验)

Drop the adaptor from a height of 100cm onto 20mm thick hardwood floor, hitting the adaptor for 6 times, no mechanical damages or other failures, no electrical deterioration and other failures comparing to before test condition.

(制品从100cm 处落下6 次, 落下的方向任意, 落在20mm 厚的硬木地板上, 实验后与实验前状态比较没有机械破损等不良状况, 且不出现电器性能损坏)

Plug In and Out Test (插拔实验)

After plug the connector in(30N max) and out(10-50N) the female-connector for 10 times, then plug in and out for 3000 times, light damage in the mechanic characteristic, but no abnormality in electric characteristic.

(插头与连接器经正常插拔10 次, 插头每次插入力度不大于30N, 拔出在10-50N 之间后持续拔插3000 次。外观允许有轻度损伤, 但导通性能良好)

Salty Fog Test for Metal Part (五金件盐雾实验)

Experiment condition, Salty water thickness: 5%, Equipment Temperature: 35~40°C, put the adaptor(unpacking)in the test equipment for 24h, after 24h recovery at 25°C checking the appearance, the metal parts have no erode and rust.

(盐雾试验要求：调制（工业盐）盐水的浓度为5%，设备温度设置为35~40℃，适配器不包装，放入盐雾试验设备中持续喷雾8 小时，试验结束后取出，在常温下搁置8 小时，再检查适配器外观；要求外露金属及电镀件不生锈。)

9. Mechanical Characteristics (机械性能)

Appearance (外观)

Visual inspection the case have no visual abnormality, no obvious nick, burr and other mechanical damage, outer metal have no rust. Use limit sample to check for any failures. (目视检查，无外观异常，表面无明显划痕、毛刺及其它机械损伤，外露金属部分无锈，其它限度根据样品确认。)

Case/Resin Materials (外壳材质)

Flame resistance applies to UL94-V0
(耐燃性遵循UL94-V0)

10. Environmental Performances(环境性能)

Operating at the Lower temperature (低温工作实验)

At $-5\pm 2^{\circ}\text{C}$, with the rated voltage 100-240Vac charged to the primary and unloaded and fullload on the secondary, no abnormality in electric and mechanical characteristic, after 4 hours recovery at the room temperature.

(环境温度 $-5\pm 2^{\circ}\text{C}$ ，在输入端施加额定电压100-240Vac 输出端无负荷与满载状态下，试验后常温放置4 小时，无特性异常)

Operating at the High Temperature (高温工作实验)

At $45\pm 2^{\circ}\text{C}$, with the rated voltage 100-240Vac charged to the primary and unloaded and fullload on the secondary. No abnormality in electric and mechanical characteristic after 4 hours recovery at the room temperature.

(环境温度 $45\pm 2^{\circ}\text{C}$ ，在输入端施加额定电压100-240Vac 输出端无负荷与满载状态下，试验后常温放置4 小时，无特性异常)

Storage at the Lower Temperature(低温放置)

At $-20\pm 2^{\circ}\text{C}$, test of non-operated, No abnormality in electric and mechanical characteristic after 4 hours recovery at the room temperature.

(在 $-20\pm 2^{\circ}\text{C}$ 非工作状态下进行试验，试验后常温放置4 小时后测试无异常)

Storage at the Higher Temperature (高温放置)

At $70\pm 2^{\circ}\text{C}$, test of non-operated, No abnormality in electric and mechanical characteristic after 4 hours recovery at the room temperature.

(在 $70\pm 2^{\circ}\text{C}$ 非动作状态下进行试验，试验后常温放置4 小时后测试无异常)

Storage at High Temperature and High Humidity with the Adaptor Turned

on(通电高温高湿度放置)

At 45°C , 90~95%RH, operating at power supplied (100-240Vac) and unloaded and full load on the secondary, no abnormality in electric and mechanical characteristic, after 4 hours recovery at the room temperature.

(在45℃,90~95%RH, 加电状态下, 试验后常温放置4 小时测试特性异常)

Storage at low Temperature and Low Humidity with the Adaptor Turned on(通电低温低湿度放置)

At -5℃,10%~40%RH, operating at power supplied (100-240Vac) and unloaded and full load on the secondary, no abnormality in electric and mechanical characteristic, after 4 hours recovery at the room temperature.

(在-5℃,10%~40%RH, 加电状态下, 试验后常温放置4 小时测试异常)

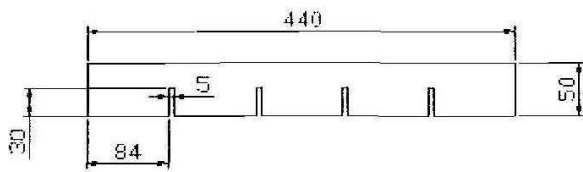
11. Test Equipment List (测试设备清单)

(项目)	(设备)	(制造)	(型号)
1	(AC 变频电源)	艾诺	AN97001HSS
2	(示波器)	TEK	TDS1012B
3	(电子负载仪)	Chroma	63103
4	(万用表)	Fluke	Fluke 187
5	(功率计)	威博	PF1200
6	温度表	CENTER	304
7	电磁干扰机	BEI JINGKEHJAW	KH3925
8	恒温恒湿机	爱斯佩克	EL-04KA
9	振动测试仪	重力	NY2001D
10	数据采集器	Agilent	34970A
11	插头引线弯拆试验机	奥斯达	CM-817
12	推力器	ALGOL	20KGF 200N
13	数显卡尺	上工	200mm

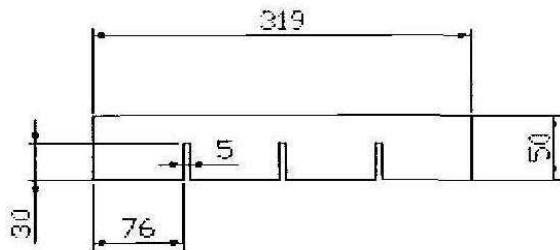
12. Photograph of the Product (制品外观图)



PowerPax UK



Cardboard No.1: 440*50mm material: B=B



Cardboard No. 2: 319*50mm material: B=B

Package Instruction:

1. Five layers per carton, 20pcs per layer, 100pcs in one carton in total.
2. Cardboard is set up in the bottom and top of the carton, so does between two layers.
3. Use cardboard and PE bag