LCD PSU SPECIFICATION

PW152CO

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FILE NO.	
REVISION	**V0.2**
DATE	**2010-05-27**

仅供客户内部使用

SPECIFICATION

FILE NO.			
MODEL NO.	PW152C0		
REVISION	0.2	DATE	2010-05-27

Revision History 修改记录

Date	Rev.	Page	Summary	Revised by
2010-05-27	V0.2	6	输出保持时间更改为≥20ms	秦建设
2010-05-27	V0.2	8	运行的最低温度更改为-10℃	秦建设

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1. Electrical Specifications 电气规格

1.1. AC Input Characteristics 输入特性

Item	Specification 规格	Condition 测试条件
Rated Input Voltage* 额定输入电压	120Vac-240Vac	Rated working range 额定工作范围
Normal Input Voltage* 正常输入电压	102Vac-264Vac	Normal working range 正常工作范围
Limited Input Voltage* 极限输入电压	90Vac-290Vac	Limited working range 极限工作范围
Input Frequency 输入频率	47Hz-63Hz	
Max. Input AC Current 最大输入交流电流	2.5A Max.	Min input and full load
Inrush Current 浪涌电流	50A peak	110Vac，Cold start
	70A peak	240Vac，Cold start
Efficiency (Full Load) 效率（满载）	82% Min.	110Vac，Full load
	88% Min.	220Vac，Full load
Power Factor 功率因数	0.9 Min.	230Vac Input
Leakage Current 漏电流	0.7mA Max.	240Vac Input
Harmonics Current 谐波电流	Mean GB17625.1-1998/IEC61000-3-2 CLASS D	
Standby Power Loss 待机功耗	3.3V, 0.5W Max.	With 10mA, at 230Vac
Input Fuse Type 输入保险型号	T3.15AH 250VAC	

Remark: 正常输入电压：适用于电源电性能，温升裕量测试等内部控制；
极限输入电压：适用于老化波动等环境试验

1.2. DC Output Characteristics 输出特性

1.2.1. Output Characteristics

Item 项目	CH1	CH2	Condition 测试条件
Output Voltage 输出电压	24V	+3.3V	RMS
Minimum load current 最小电流	0.5A	5mA	RMS
Rated load current 额定电流	4.5A	0.2A	RMS
Maximum current 最大电流	5.5A	0.5A	2min Max.
Line regulation 线性调整率	± 5%	± 5%	At rated load 额定负载
Load regulation 负载调整率	± 5%	± 5%	10% to rated load； Change rate at 0.2A/s
Cross regulation 交叉调整率	± 5%	± 5%	Min load to rated load
DC Output Ripple & Noise 输出纹波和噪声 (remark)	<240mV	<100mV	Min to Rated load range

Remark: 1. Ripple and noise are defined as periodic or random signals over a frequency band of 10 Hz to 20 MHz. ☺纹波和噪声是设置在 10 Hz 到 20MHz 带宽的周期性或随意性的信号。

2. Outputs should be bypassed at the connector with a 0.1uF ceramic disk capacitor and a 10uF electrolytic to simulate system loading. 输出并联 0.1uF 的陶瓷电容和 10uF 的电解电容

1.2.2. PS On / Off Control 开关控制 (Outside Signal Control 外部控制信号)

PS_ON signal	Condition	Outputs Status
Active-high 高	≥2.0V, >2mA	Enable
Active-low 低	≤1.0V	Unable
Open circuit 开路	/	Unable

1.2.3. Output Overshoot At Turn On＆Turn Off 输出过冲

Output Channel	Output (V)	Over Shoot Voltage (Vmax.) Change Rate		Condition
		Turn on	Turn off	
CH1	24V	≤10%	≤10%	Rated Load
CH2	+3.3V	≤10%	≤10%	Rated Load

Remark:

1.2.4. Turn-on Delay Time 启动延迟时间

The power on time is defined as the time from when PS_ON is pulled low to when the +3.3Vsb outputs are within the regulation ranges. The power on time shall be less than 500ms.

The +3.3Vsb shall have a power on time of 300ms maximum after application of valid AC voltages.

Output voltage	110Vac input	220Vac input	Condition
24V	≤500 ms	≤500 ms	Rated Load
+3.3Vsb	≤300 ms	≤300 ms	Rated Load

Remark:

1.2.5. Output Voltage Rise Time 输出电压上升时间

Output voltage	110Vac input	220Vac input	Condition
24V	20 ms≤T≤150 ms	20 ms≤T≤150 ms	Rated Load
+3.3Vsb	≤100ms	≤100ms	Rated Load

Remark: The output voltages shall rise from 10% to 90% of their output voltage.输出电压从 10%上升到 90%

1.2.6. Hold-Up Time 输出保持时间

Output voltage	110Vac input	220Vac input	Condition
24V	≥20ms	≥20ms	Rated Load
+3.3Vsb	≥20ms	≥20ms	Rated Load

Remark: All of dc output at full load.

1.2.7 Output Transient Response 输出动态响应

Voltage Tolerance Limit 容许限值	Slew Rate 爬升率	Load Change 负载变动
+24V ± 5%	0.2A/us	10% to 90% Rated load
+3.3Vsb ± 5%	0.2A/us	10% to 90% Rated load

1.2.8 Reset after Shutdown 复位

The Power supply will rework after turn on switch from shutdown.

在电源关闭后，将 AC 开关重置 ON 状态，电源才能重新工作。

1.2.9 PFC Voltage PFC 电压

PFC Voltage	Voltage Tolerance Limit 容许限值	Condition
RMS	395± 10Vrms	Rated Load
Peak	≤440Vpk	Rated Load

2. Protection 保护功能

2.1. Input Protection 输入保护

2.1.1 The input power line will be fused with a T3.15AH250VAC fuse.

2.1.2 Brown out voltage: NO.

2.1.3 Input over voltage protection: NO.

2.2. Over Voltage Protection 输出过压保护

Output Voltage 输出电压	Over Voltage Range 过压范围	Over Voltage Protection Status 过压保护状态	Condition
24V	27~32V	24V shutdown; 3.3V normal	Rated Load
+3.3Vsb	4~6.5V	24V shutdown; 3.3V hiccup	Rated Load

Remark:

2.3. Short Circuit Protection 输出短路保护

Output Voltage 输出电压	Short Circuit Protection Status 短路保护状态
24V	24V shutdown; 3.3V normal
+3.3Vsb	24V shutdown; 3.3V hiccup

Remark:

2.4. Over Current Protection 输出过流保护

Output Voltage 输出电压	Over Current Protection 过流保护
24V	6A-8A
+3.3Vsb	0.8 - 2.0A

Remark: Over Current Protection Status: 24V shutdown; 3.3V normal

过流保护状态：3.3V 正常，24V 为零输出

3. Inverter Electrical Specification 逆变器规格(ONLY FOR IPB&LPIS)

4. Environmental Requirement 环境要求

4.1. Temperatures 温度

Condition 条件	Minimum 最小值	Maximum 最大值	Unit 单位
Operating 运行	-10	40	℃
Storage 储存	-10	70	℃

Temperature coefficient: ±0.04% per ℃

4.2. Humidity 湿度

It is based on relative humidity and non-condensing. 相对湿度/无冷凝

Condition 条件	Minimum 最小值	Maximum 最大值	Unit 单位
Operating 运行	10%	90%	RH
Storage 储存	5%	95%	RH

4.3. Vibration and Shock 振动冲击耐受

Vibration: 0.01G^2 per Hz at 5Hz, sloping to 0.02G^2 per Hz at 20Hz and maintaining 0.02G^2 per Hz from 20Hz to 500Hz. The area under the PSD curve is 3.13g_{RMS}. The duration shall be 10 minutes per axis for all three axes on all samples.

Shock: 50G Trapezoidal Wave, Velocity change = 170 in. / sec. Three drops in each of six directions are applied to each of the samples.

4.4 Altitude 海拔高度

Condition 条件	Minimum 最小值	Maximum 最大值	Unit 单位
Operating 运行	0	10000	feet
Storage 储存	0	20000	feet

4.5 Cooling Method 冷却方式

Ventilation Cooling.

5. Safety & EMC 安规和电磁兼容性

5.1. Safety Requirements 安规要求

Safety	Standard
CUL	UL6500/EN60065.7TH
TUV / GS	
Nemko	
Demko	
Fimko	
Semko	
PSE	
CB	
CCC	GB8898-2001

5.2. EMS 电磁抗扰

Test item 测试项目	Test Specification 测试规格	IEC Standard 国际电工标准
RS 辐射抗扰	FR : 26 MHz ~ 1 GHz, Field / Strength : 3 V / M	61000-4-3
EFT 脉冲群抗扰	2 KV on AC power line	61000-4-4
SURGE 浪涌	2KV (L – N) & 4 KV (L/N – PE) / 1.2 ~ 50Usec . TCL standard: Common mode:6kV,different mode:2kV	61000-4-5
CS 传导抗扰	3 V / M	61000-4-6
DIPS 电压暂降	0 % 250 Cy. / 40% 5 Cy. / 70% 5 Cy.	61000-4-11

5.3. Conducted EMI 传导电磁干扰

5.4. Radiated EMI and EMC 辐射电磁干扰及电磁兼容

5.5. Dielectric Withstand Hi Pot Test 抗电强度测试

Primary to Secondary 初级到次级	3000 Vac or 4242 Vdc Hi-Pot Test from primary to secondary for a minimum of one minute	Trip current <10mA, 50Hz

5.6. Insulation 绝缘性能

Input To Output 输入到输出	Insulated Resistance 绝缘电阻	Test Condition 测试条件
	≥ 6M OHM	DC 500V

6. Reliabilities 可靠性

Item 事项	Description 描述
M.T.B.F. 平均故障间隔时间	MTBF of PSU shall equal or exceed 100,000 hours when operated at 75% continuous load in an ambient temperature of 25 ℃ as calculated by parts stress method of MIL-HDBK-217F.
Temperature rise 温升测试	
Surge and EFT 浪涌及脉冲群测试	
Burn-in 老化测试	
Derating test 裕量	

7. Acoustics 声音

Refer to DQA requirement and standard with acoustic noise.

依据 DQA 的噪声测试要求和噪声测试方法执行。

8. Mechanicals 结构

8.1. PCB Dimension: 200mm(L) * 150mm(W) * 22mm(H))

8.2. Dimension with soleplate: NONE

8.3. Power Supply Assembling (refer to following diagram)

9. Timings 时序

10. Weight 重量

11. Pin Connection 连接器脚位定义

2pin-CON1: 7.92mm Connection and Function

Pin Connection	Function
AC-L	AC IN PUT LINE
AC-N	AC IN PUT NUTURE

12pin-CON: 2.0mm Connection and Function

Pin Connection	Function
1,2,4	24V
3,5,6,9	GND
7	3.3VSB
8	NC
10	PS_ON
11	DIM
12	BL_ON

14pin-CON: 2.5mm Connection and Function

Pin Connection	Function
1~5	24V
6~10	GND
12	BL_ON
13	DIM
11.14	NC

12. Others 其他事项

Item	**Description 描述**
Packing 包装	
Shipping 运输	
Storage 储藏	

13. Appendix 附录

仅限TCL多媒体内部使用