

客户名称/CUSTOMER: GREYLIGHT
客户代码/CUSTOMER CODE:

承 认 书

SPECIFICATION FOR APPROVAL



产 品 名 称 DESCRIPTION: LCD POWER SYSTEM
客 户 型 号 CUSTOMER MODEL: _____
客 户 编 号 CUSTOMER CODE: _____
承 制 方 型 号 MANUFACTURER MODEL : CTN120-P
版 本 EDITION: _____
日 期 DATE: 2011/06/22

使用方确认 CUSTOMER APPROVED

采购部 PURCHING	研发部 R/D	品质部 QUALITY
公司签署 COMPANY SIGN		

承制方确认 MANUFACTURER

拟制 DRAWING	审核 CHECKED	批准 RATIFY
公司签署 COMPANY SIGN		

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1. Power Supply Overview 电性能指标:

1.1 Table 1 Input Electrical Characteristics Overview (输入特性)

Normal voltage range 标称输入	100-240V~
Frequency range 频率范围	50Hz/60Hz ± 5%
Max input ac current 满载输入电流	2.0Amax at full load condition
Inrush current (cold start) 浪涌电流	50A typ peak, 100V~; 100A typ peak, 220V~
Efficiency (full load) 效率	75% min at 100V~; 80% min at 220V~
Harmonic current 谐波电流	Meet EN60065-2002/IEC61000-3-2 class D
Leakage Current 泄漏电流	Less Than 0.5mA, 230V~ input
Standby Power Loss 待机功耗	≤ 0.5W 240V~ input, 5VSB output current ≤ 20mA
Input Fuse 输入保险	T3.15A/250Vac

1.2 Table 1 Output Electrical Characteristics Overview (输出特性)

1.2.1 Table 2 Output Voltage, Current & Regulation. (输出调整率)

Output Voltage 输出电压	Regulation 调整率	Min.current 最小电流	Load Current Rated 带载电流范围	Peak current or power 峰值电流或功率
+24V	+24 ± 5%	0.01A	0.01A-2A	+24V Total power ≤ 48W
+12V	+12 ± 5%	0.01A	0.01A-2A	+5.0V, +12.0V, +5.0V(STB) Total power ≤ 39W
+5.0V	+5.0V ± 5%	0.01A	0.01A-2A	
+5.0V(STB)	+5.0V ± 5%	0.02A	0.02A-1A	

Note:* The peak current or power should be test at other of dc output at Rated load, And the peak current pulse width within 100ms 峰值电流或功率的测试是在其它额定负载时测试, 且脉宽小于 100 毫秒。

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

Output Voltage	Ripple & Noise (Max.)
+V1(+24V)	240mVp-p@25°C; 350mVp-p@-10°C
+V2(+12V)	120mVp-p@25°C; 200mVp-p@-10°C

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+5.0V	80mVp-p@25℃;200mVp-p@-10℃
+5.0V(STB)	80mVp-p@25℃;200mVp-p@-10℃; 150mVp-p when STB

Note: 1) Measurements shall be made with an oscilloscope with 20MHz bandwidth.

示波器须设置在 20 兆赫兹带宽

2) Outputs shall be bypassed at the connector with a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor to simulate system loading. 输出须并联 0.1uF 的陶瓷电容和 10uF 的电解电容来模拟负载

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
5.0V/5.0VS ± 10% 24V/12V ± 10%	0.2A/uS	Min. to 50% load and 50% to Max load
All output ± 10%	0.2A/uS	Min. load to Max load

Note: Transient response measurements shall be made with a load changing repetition rate of 50Hz to 10kHz. 以 50~10KHz 的频率跳变负载来测试。



1.2.4 Table 5 DC Output Hold-Up Time. (输出保持时间)

Output Voltage	120V~input	220V~input
+V1(+24V)	≥10mS	≥10mS
+V2(+12V)	≥10mS	≥10mS
+5.0V	≥10mS	≥10mS
+5.0V(STB)	≥10mS	≥10mS

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

1.2.5 Table 6 DC Output Overshoot At Turn On & Turn Off. (输出超调)

Output Channel	Output (V)	Over shoot voltage (V) 超调电压	
		Turn on 开机	Turn off 关机
+24V	+24V	10%	10%
+12V	+12V	10%	10%

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+5.0V	+5.0V	10%	10%
+5.0V(STB)	+5.0V	10%	10%

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	120V~input & Full Load	220V~input & Full Load
+24V	≤100mS	≤100mS
+12V	≤100mS	≤100mS
+5.0V	≤100mS	≤100mS
+5.0V(STB)	≤100mS	≤100mS

Note: The output voltages shall rise from 10% to 90% of their output voltage.

输出从 10%上升到 90%的时间

1.3 Remote On/Off Control: (遥控功能)

The power supply DC outputs (without +5VSB) shall be enable with an active-high TTL ($\geq 2.5V/2.0mA$) -compatible signal (STB). The +5VSB is on whenever the AC power is present.

除+5VSB外，其余输出受控于一个 TTL 电平兼容信号 (STB $\geq 2.5V/2.0mA$)，+5VSB 上电就存在。

* When STB is pulled to TTL high, the DC outputs are to be enabled.

STB 高电平，打开输出

* When STB is pulled to TTL low or open circuit, the DC outputs are to be disabled.


STB 低电平，关闭输出

Table 8.

STB Signal	Comments	Outputs
STB-high	$\geq 2.5V$ & 2.0Ma(source)	Output
STB-low	$\leq 0.5V$	X
STB-open	--	X

1.4 Protection: (保护功能)

1.4.1 Table 9 DC output Over Voltage Protection. (输出过压保护)

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Output Voltage	TYP. Over Voltage	Comments
+V1(+24V)	28V	Power supply latch into shutdown state 输出锁机

Note: The power supply shall be test at max AC voltage(264V~)and min load or no load.
应该在最大交流输入电压 264 伏和轻载、空载下测试。

1.4.2 Table 9 DC Output Over current Protection. (输出过流保护)

Output Voltage	Over Current	Comments
+24(+24V)	>2.5A _{typ} *	输出锁机
+12(+12V)	>2.5A _{typ} *	Hiccup 尝试重复启动
+5V	>2.5A _{typ} *	Hiccup 尝试重复启动
+5.0VSTB	>2 A _{typ} *	Hiccup 尝试重复启动

Note:* The over current protection should be test at other of dc output at Rated load
过流保护测试是在其它额定负载时测试。

1.4.3 Table 11 DC Output Short Circuit Protection. (输出短路保护)



Output Voltage	Comments
+V1(+24V)	输出锁机
+V2(+12V)	Hiccup 尝试重复启动
+5V	Hiccup 尝试重复启动
+5.0V(STB)	Hiccup 尝试重复启动

Note:* The Short Circuit protection should be test at other of dc output at Rated load
短路保护测试是在其它额定负载时测试。

1.4.4 Reset After Shutdown. (保护功能复位)

Recycle the STB signal, the power supply will restart after the fault removed. But +24V, output over voltage can't be reset.

故障去除后, 关掉 STB 信号再打开, 电源即可回复。+24 过压后不可恢复。

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2. Isolation (绝缘性能)

2.1 Table 12 (绝缘阻抗)

Input To Output	DC500V 50MΩ min (at room temperature)
Input To FG	DC500V 50MΩ min (at room temperature)
Output To FG	Non Isolated

2.2 Table 13 (绝缘耐压)

Input To Output	3000Vac 50Hz 1minute ≤ 10mA
Input To FG	1500Vac 50Hz 1minute ≤ 10mA
Output To FG	Non Isolated

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 compliance with the following Criterion:

电源安全性满足下列标准

- 1) **UL60950**
- 2) **EN60950**
- 3) **GB4943-1995**

4. EMC (电磁兼容性)

4.1 EMI (电磁干扰)

The power supply shall compliance with the following Critrion:

电源电磁干扰满足下列规则:

1) **Conduction Emission:** (传导干扰度)

*EN55022,CLASS B

*GB9254,CLASS B

*FCC PART15 CLASS B

2) **Radiated Emission:** (辐射干扰度)

*EN55022,CLASS B



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*GB9254,CLASS B

*FCC PART15 CLASS B

4.2 EMS (电磁抗扰)

The power supply shall compliance with the following Criterion:

电源电磁抗扰满足下列规则:

1) ESD (静电抗扰度)

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

2) EFT (脉冲群抗扰度)

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

3) Surge (雷击浪涌)

*GB17626.5-1998/IEC61000-4-5 1.5KV/3KV

5. Environmental Requirement (工作环境)

5.1 Temperature (环境温度)

*Operating: 0°C to +45°C.

*Store: -20°C to +80°C.

5.2 Humidity (环境湿度)

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

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

5.3 Altitude (海拔高度)

*Operating: to 10,000ft.

*Store: to20,000ft.

5.4 Cooling Method (冷却方式)


*Ventilation cooling.自然冷却

5.5 Vibration (振动耐受)

*10-55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each alongX,Y and Z axis.

5.6 Impact (冲击耐受)

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

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6. Dimension (物理尺寸)

*180mm×180mm×10mm (长 L*宽 W*高 H) .

7. Weight (重量)

* (TYP)

8. Pin Connection (连接器脚位定义)

Table 15 Pin-CON2 Connection And Function

NO.	Pin Connection	Function
5. 6. 7. 8	GND	+24VDC RETURN
1. 2. 3. 4	+V	+24VDC OUTPUT

Note: CON2—VH CONNEETION,TYPE:pitch2.5mm

Table 16 Pin-CON3 Connection And Function

NO.	Pin Connection	Function
3. 4	GND	+24VDC RETURN
1. 2	Vaudio	+24VDC OUTPUT

Note: CON3—VH CONNEETION,TYPE:pitch2.5mm

Table 17 Pin-CON1 Connection And Function

NO.	Pin Connection	Function
1.2	GND	+5V +5VSB +12VDC RETURN
3.4	+5V	+5VDC OUTPUT
5	STB	SMPS ON/OFF CONTROL (ON=HIGH)
6	+5VSB	STANDBY (+5. 0VDC) OUTPUT
7.8	+5V	+5VDC OUTPUT
9.10.11	GND	+5V +5VSB +12VDC RETURN
12.13	+12V	+12VDC OUTPUT

Note: CON1—VH CONNEETION,TYPE:pitch2.5mm


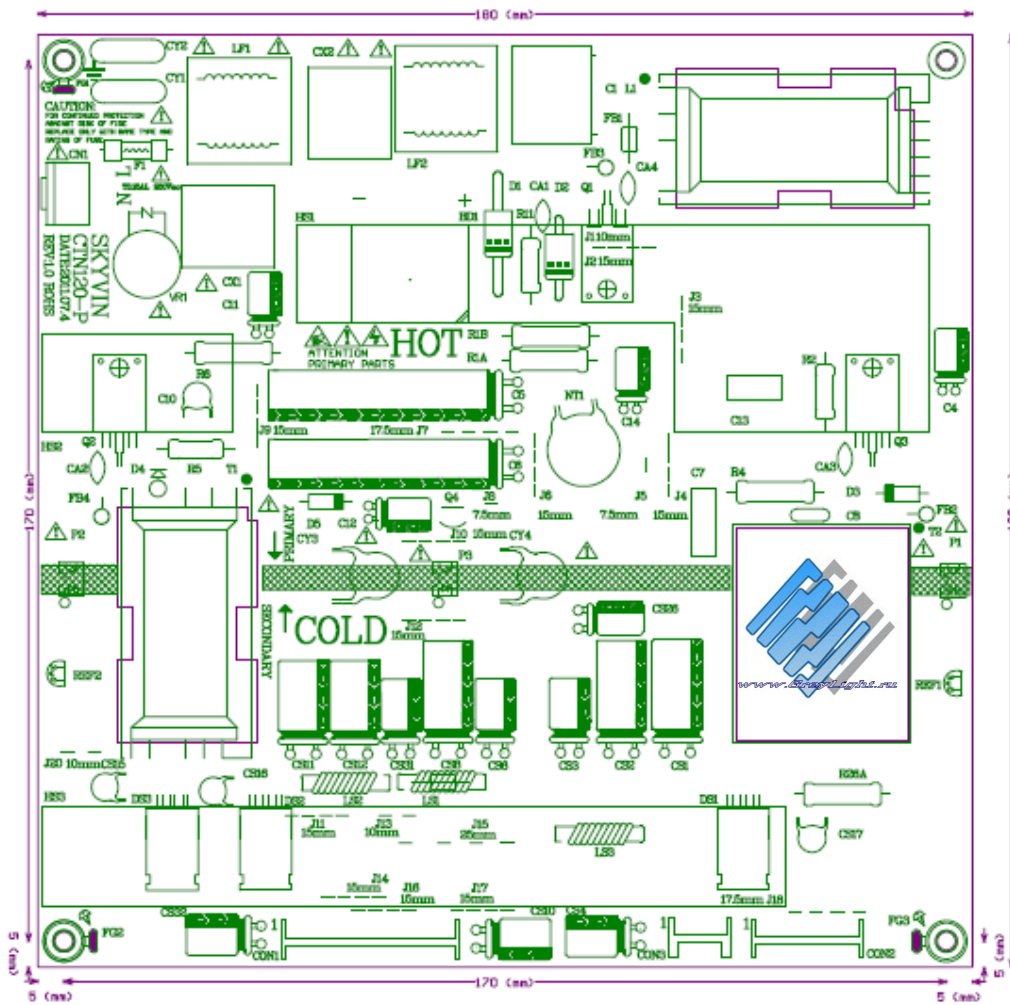
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Table 18 Pin-CON1 Connection And Function

NO.	Pin Connection	Function
①	AC-L	AC INPUT LINE
②	NC	NC
③	AC-N	AC INPUT NUTURE

Note:CON1—VH CONNEETION,TYPE:pitch3.96mm

9. Power Supply Mounting (安装尺寸)



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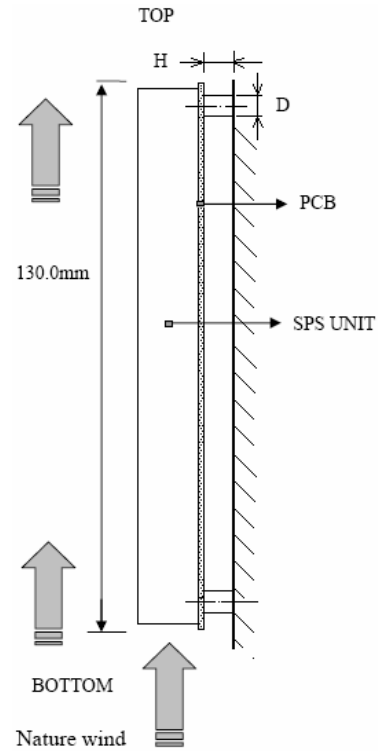
10. Mount Method (装配注意事项)

Note:

- 1*. Mount the unit to the mounting board using M3 screw. The maximum value of the tightening torque is 0.1N-M. The insertion depth of the screw should be less 5.5mm.

$$D \leq 5.5\text{mm}, H \geq 7.0\text{mm}$$

if $H \leq 7.0\text{mm}$. Add 190mm × 190mm × 0.25mm (W*H*T) Mylar under PCB bottom



11. Notice(注意事项)

- 11.1 The production shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on it;

该产品不能遭到水滴或水溅，而且设备上不能放置诸如花瓶一类装满液体的物品；

- 11.2 Please use it under the condition of good aeration.

该产品使用时需有良好通风。

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