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SLA-Series LED Controller User's Manual

Version: 1.0.6

Last Updated: 11/15/2011

Relevant Products

Part Numbers

SLA-1000-2, SLA-1200-2, SLA-0100-2

Revision	Date	Author	Description
1.0.0	Dec. 16, 2006	JT Zheng	Initial Revision
1.0.1	Feb. 26, 2007	JT Zheng	Add face plate
1.0.2	May 29, 2007	JT Zheng	Accuracy modification
1.0.3	Jul. 13, 2007	JT Zheng	DIP Switch Node modification
1.0.4	Apr. 20, 2011	JT Zheng	Adding SLA-1000 module
1.0.5	June 29, 2011	Zoab Khan	Revision and editing
1.0.6	Nov. 3, 2011	JT Zheng	Adding SLA-0100 module

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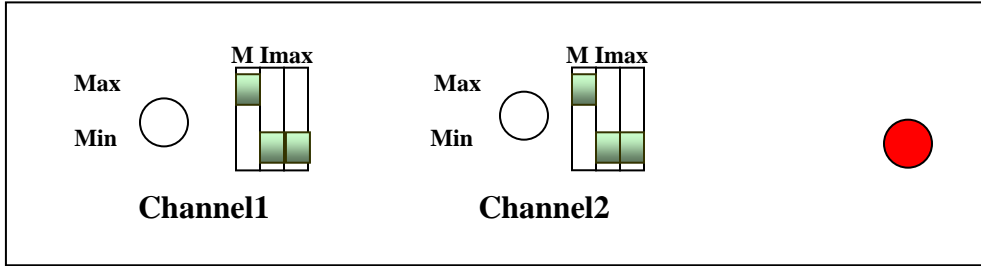
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Mightex Sirius™ SLA LED Controller was designed to drive various kinds of LED sources, including Mightex Sirius™ Light Sources, and other LEDs. The controller has two operation modes:

- **Manual Knob Control:** User can adjust the current output of channel manually.
- **Analog Input Control:** 0 – 5V analog input to control the current output of a channel.

The Mode is selected via a DIP switch; each channel has a 3 position DIP Switch:



The first position is for Mode selection as following:

M



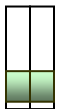
Set to **Manual Knob Control** Mode, this is the factory default mode.
In this mode, user can manually turn the knob to adjust the output current of this channel.
(Note that in this mode, there should be NO analog input connected to the module)



Set to **Analog Input Control** Mode, the output current is proportional to the analog input voltage.

The next two positions are used to select the maximum current of each channel:

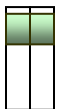
Imax



The maximum current is 350mA. *(For SLA-1000 and SLA-1200 modules)*
The maximum current is 30mA. *(For SLA-0100 module)*



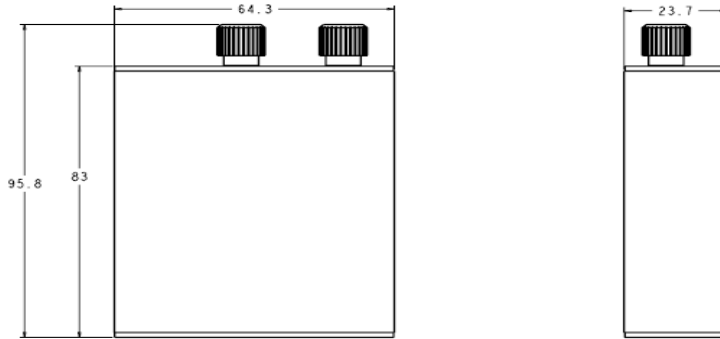
The maximum current is 750mA. *(For SLA-1200-x modules)*
The maximum current is 500mA. *(For SLA-1000 module)*
The maximum current is 50mA *(For SLA-0100 module)*



The maximum current is 1200mA. *(For SLA-1200-x modules)*
The maximum current is 1000mA. *(For SLA-1000 module)*
The maximum current is 100mA. *(For SLA-0100 module)*

Note: When setting a smaller Imax (e.g. 350mA), user gets a fine resolution of current control

INSTALLATION DRAWING:



ELECTRICAL SPECIFICATIONS:

Parameters	SLA-0100-2	SLA-1000-2	SLA-1200-2	Unit
Number of Channels	2	2	2	
Power Supply Input Voltage (V_{dc})	9 ~ 24	9 ~ 24	9 ~ 24	V
Maximum Output Voltage (V_{max}) ¹	< 21	<21	<21	V
Maximum Per Channel Output Current (I_{max})	100	1000	1200	mA
Maximum Per Channel Output Power (P_{max}) ³	2.1	10	10	W

1. Maximum Output Voltage is 3V less than the Power Supply Input Voltage, i.e. $V_{max} = V_{dc} - 3V$. For instance, with a Power Supply Input Voltage of $V_{dc}=24V$, the Maximum Output Voltage V_{max} would be $(V_{dc}-3V)=21V$
2. If the channel output voltage is V_d and the output current is I_d , they must simultaneously satisfy: (1) $V_d \leq V_{max}$; (2) $I_d \leq I_{max}$; and (3) $V_d * I_d \leq P_{max}$.

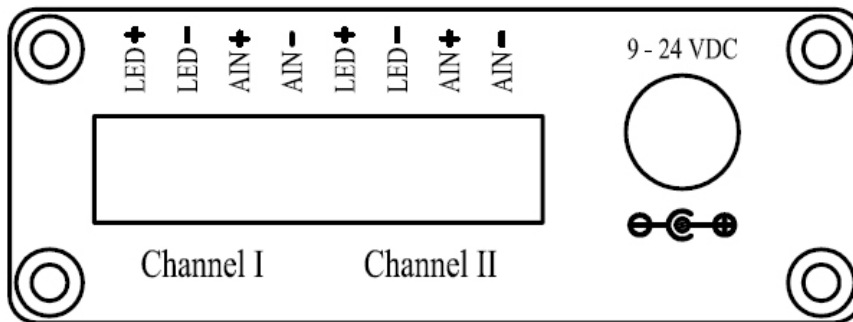
SLA-1000 and **SLA-1200** modules are designed with high-efficiency DC-DC switch inside. Each channel can work separately with very different load, the efficiency is 85-90% in most cases. While the **SLA-0100** module is with a linear design. In all cases, care must be taken while driving a LED head on a certain channel. For protecting the LED head and the controller, we expect customer to pay attention to the following items:

- 1). **HEAT SINK FOR LED:** User must have proper heat sink for the LED load (usually the light head), especially for some high power LEDs, the heat dissipation is considerable big, so we expect user have necessary heat sink for the LED to make sure LED can work under the desired current/voltage.
- 2). **CHANNEL MAXIMUM CURRENT:** For driving a certain LED (or a combination of LED's), user must carefully set the maximum current of the channel by setting the DIP switch
- 3). **CONTROLLER INPUT CURRENT/VOLTAGE:** When user chooses AC-DC adapter, we expect user to do the following:
 - a) User should choose an AC-DC adapter which can give an output voltage at least 3V higher than the highest load voltage of the channels. For example, in case of a 2 channel module, the loads on channels are: *channel 1: 3.5V at 1A*, and *channel 2: 7.0V at 0.35A*.

The user should choose AC-DC adapter with at least 10V output voltage (10V- 24V), For **SLA-1000/1200**, as for current, user might figure out with the 80% power efficiency, in the above example, the total output power is: $P_{in} = 5.95/0.8 + 1 = 8.4W$ (note that the additional 1W is the power consumption for others on board circuit), In this case, the AC-DC output current should be bigger than $8.4/12 = 0.7A$, Here, we assume a 12V AC-DC adapter is used, and in this case, a 12V/1.0A adapter is a good choice. For **SLA-0100** driver, the AC-DC must be able to provide current as sum of the I_{max} of two channels plus 100mA.

- b) For **SLA-1000/1200**, although each channel may output 21V maximum load voltage and 1.2A maximum current, the maximum power output limit is 10W, which means while output 21V, the current should not be more than 0.48A (in DC mode), and the same for the case of 1.2A output (in this case, the output voltage should be kept less than 8.4V. While a 2-channel module is working under full power (20W output), it's recommended to have external heat dissipation consideration, e.g. mount the box on metal plate (or surface).
For **SLA-0100** module, the current is much smaller ($I_{max} = 100mA$), thus there's no power output limit applied and heat dissipation are not a major concern.

PIN LAYOUT:



Each Channel has four pins, defined as following:

Signal	LED+	LED-	Analog Signal	Analog Input GND
Description	LED Anode	LED Cathode	0-5V Analog Input*	Analog Input GND

NOTE: In Analog Input Control Mode, the output current is linearly proportional to input voltage.

MECHANICAL SPECIFICATIONS:

Dimension	80mm (L) x 64.3mm (W) x 23.7mm (H)
Weight	60g

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