



Four-Channel Manual and Software Controlled Universal LED Controllers

Part Numbers: SLC-MA04-MU, SLC-CA04-MU

FEATURES

- Software/manual controlled
- Current monitoring display
- Universal driver- suitable for any LED
- User friendly application software with GUI
- Capable of driving variable loads
- Full-featured SDK
- Up to 1,200mA output current
- High precision with 1mA current resolution

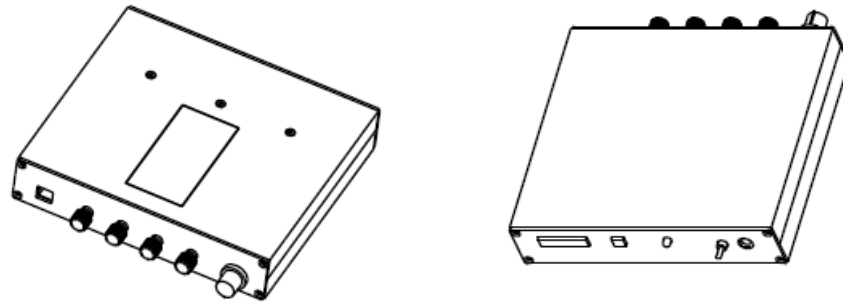
APPLICATIONS

- Machine Vision
- Displays
- Semiconductor equipments
- Test Instruments
- Microscopy
- Medical Instruments

PRODUCT DESCRIPTION

Mightex's four-channel SLC/MU-series universal LED controllers are designed to drive a broad range of LED light sources, and they offer the flexibility for users to operate each LED channel independently, both manually and through software. In addition, the LEDs can be driven both in Continuous Wave (CW) mode and in strobe mode.

The software comes with a user-friendly GUI that enables one to drive LEDs without the need to write any code. Furthermore, a full-featured SDK is provided in order for users to write their own software and to integrate the LED controllers into their own systems.



1. Manual Control: Each of the four channels can be operated manually in CW mode using a knob, and each knob is operated independently to control the output current of a specific channel. The LED controller also has a fifth knob (i.e. a "Global" knob) that enables one to adjust the output current of all the channels at the same time and with the same step size. Therefore, one can first set the intensities for the LED channels - independently - using the four (small) knobs, and then can increase/decrease the set intensities of all channels simultaneously using the "Global" knob.

In order to prevent LED damage due to 'overdriving/overheating', the maximum output current of each LED channel can be set individually, via the software provided with the LED controller, to match the current rating of the LED connected to the channel.

2. Software Control: The LED controller can also be operated via a Windows-based application software, provided with the device. In software control mode, each channel can be individually configured by the software to operate in one of the following three modes:

a. Disable Mode:

The channel is disabled, and its output is completely turned off.

b. Normal Mode (or CW Mode):

The output current is constant, which can be adjusted (using software) from 0mA to 1,200mA through the USB interface.

c. Strobe Mode:

A Pulse-Width-Modulated (or PWM) periodic strobe pattern is output from the channel, which can be activated by a software trigger. The strobe pattern may last indefinitely or for a preset number of cycles, depending on the software setting. The maximum frequency of the PWM strobe is 500Hz.

The LED controller also has a DC output used to control a cooling fan, usually used to cool down a high-power LED. The LED controller's software allows one to control the speed of the cooling fan, through a designated variable PWM signal output.



PERFORMANCE SPECIFICATIONS

Parameters	SLC-CA04-MU	SLC-MA04-MU	Unit
Number of Channels	4	4	
Power Supply Input Voltage (V_{dc})	12 ~ 24		V
Maximum Output Voltage (V_{max})	$V_{dc} - 3.0$		V
Maximum Per Channel Output Current (I_{max})	1,200		mA
Maximum Per Channel Output Power (P_{max})	18		W
Output Current Resolution	5	1	mA
Output Current Accuracy	± 5 mA or $\pm 1.0\%$, whichever is larger		mA
Output Current Repeatability	± 2 mA or $\pm 0.5\%$, whichever is larger		mA
PWM Timing Resolution	100		μ s
PWM Timing Minimum Step Size	1,000		μ s
Interface	USB		

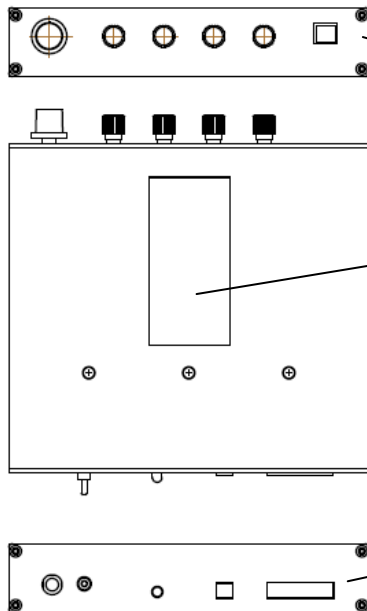
*Note: If the channel output voltage is V_d and the output current is I_d , they must simultaneously satisfy: (1) $V_d \leq V_{max}$; (2) $I_d \leq I_{max}$; and (3) $V_d * I_d \leq P_{max}$. Each period of a PWM square wave comprises of ON time and OFF time (i.e. two steps). The minimum value for each step is 1,000 μ s, and the minimum increment is 100 μ s.

CHANNEL I/O PIN DEFINITION

Each channel has two pins, defined in the following table

Label	LED+	LED-
Description	LED Anode	LED Cathode

MANUAL MODE KNOBS AND DISPLAYS



The front panel has 5 knobs and a USB port. The left most knob is the "Global" knob which controls all 4 channels simultaneously, and the other four knobs (from left to right) are for Channels #1 through #4, respectively. The USB port is on the right most side.

There is a 4x16 LCD display which shows the current settings when the module is in Manual Mode, as below:

Ch#1: xxxx (mA)
Ch#2: xxxx (mA)
Ch#3: xxxx (mA)
Ch#4: xxxx (mA)

The rear side has LED+/LED- for each channel, and there's an additional Motor +/- for DC Motor fan driving. The DC plug-in is 12 ~ 24 Vdc.



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OPERATING CONDITIONS

Operating Temperature Range: 0°C ~ 45°C
Storage Temperature Range: -25°C ~ 85°C
Relative Humidity, Non-condensing: 5% ~ 95%

DIMENSIONS AND WEIGHT

Dimension: 180.5mm (L) x 180mm (W) x 34.5mm (H)
Weight: 400g

GRAPHICAL USER INTERFACE

