PRODUCT DESCRIPTION

Mightex has developed a series of computer-controllable, multi-channel, universal LED drivers, which can be used to drive any type of LED in any of the three (3) modes: ‘NORMAL’ (or ‘constant current’), ‘STROBE’, and/or external ‘TRIGGER’ mode. Each unit comes with PC-based software with a user-friendly GUI, which enables users to drive LEDs without the need to write any code. In addition, a powerful SDK is provided, in order for users to write their own software and to integrate Mightex’s LED drivers into their own systems. Furthermore, the drivers have a built-in security feature, allowing users to limit LED driving current and voltage.

This datasheet covers four (4) product series (i.e. FA, FV, XA and XV series) of High-Precision Universal 2- and 4-Channel LED Controllers with External Triggers and 0.1mA Current Resolution, which currently include 8 models in total. All FA/FV/XA/XV LED controllers have 0.1mA current resolution, and a maximum current of 100mA in DC mode and 350mA in pulse mode.

<table>
<thead>
<tr>
<th>P/N</th>
<th># of Channels</th>
<th>Control Mode (1)</th>
<th>Arbitrary Waveform (2)</th>
<th>Interface</th>
<th>Forward Voltage Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLC-FA02-US</td>
<td>2</td>
<td>•</td>
<td>•</td>
<td>USB &amp; RS232</td>
<td></td>
</tr>
<tr>
<td>SLC-FA04-US</td>
<td>4</td>
<td>•</td>
<td>•</td>
<td>USB &amp; RS232</td>
<td></td>
</tr>
<tr>
<td>SLC-FV02-US</td>
<td>2</td>
<td>•</td>
<td>•</td>
<td>USB &amp; RS232</td>
<td></td>
</tr>
<tr>
<td>SLC-FV04-US</td>
<td>4</td>
<td>•</td>
<td>•</td>
<td>USB &amp; RS232</td>
<td></td>
</tr>
<tr>
<td>SLC-XA02-US</td>
<td>2</td>
<td>•</td>
<td>•</td>
<td>USB &amp; RS232</td>
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<td>4</td>
<td>•</td>
<td>•</td>
<td>USB &amp; RS232</td>
<td></td>
</tr>
</tbody>
</table>

Notes: (1) Each output channel can be individually configured to work in one of the following three (3) modes, controlled through a PC-based software with GUI. In all three modes, overdrive current limit can be set:

**Normal**: Constant current output at any value from 0mA to 100mA with 0.1mA resolution.
**Trigger**: External trigger signal could be used to turn on each individual channel, generating driving current with any user-defined waveform. Alternatively, each output channel can work under the “FOLLOWER” mode, in which the current output follows the waveform of the trigger input; and
**Strobe**: Internal Strobe Generator generates frequencies as high as 25KHz. The strobe signal (i.e. current levels, duty cycle and strobe frequency) can be set through software.

(2) Arbitrary Waveform. Using the included application software or SDK or RS232 command set, user may define any arbitrary waveform using 128 data points

![Arbitrary Waveform](image)

<table>
<thead>
<tr>
<th>n-1</th>
<th>i_{n-1}</th>
<th>Δt_{n-1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>i_n</td>
<td>Δt_n</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
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</table>
ELECTRICAL SPECIFICATION

<table>
<thead>
<tr>
<th>Parameters</th>
<th>SLC-XAxx-xx</th>
<th>SLC-XVxx-xx</th>
<th>SLC-FAxx-xx</th>
<th>SLC-FVxx-xx</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply Input Voltage (V(dc))</td>
<td></td>
<td>9 ~ 24</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Power Supply Input Current</td>
<td></td>
<td>&lt; 4,000</td>
<td></td>
<td></td>
<td>mA</td>
</tr>
<tr>
<td>Per Channel Driving Voltage (max)</td>
<td></td>
<td>&lt; 23.5</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Per Channel Driving Current</td>
<td></td>
<td>0 ~ 100 (&quot;NORMAL&quot; Mode)</td>
<td>0 ~ 350 (&quot;STROBE&quot; or &quot;TRIGGER&quot; Mode)</td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>Output Current Resolution</td>
<td></td>
<td></td>
<td>0.1</td>
<td></td>
<td>mA</td>
</tr>
<tr>
<td>Output Current Linearity</td>
<td></td>
<td></td>
<td>+/-0.4 (or +/-0.5%)</td>
<td></td>
<td>mA</td>
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<tr>
<td>Output Current Repeatability</td>
<td></td>
<td></td>
<td>+/-0.1 (or +/-0.2%)</td>
<td></td>
<td>mA</td>
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<tr>
<td>Trigger Input High Level</td>
<td></td>
<td></td>
<td>4.5 ~ 10.0</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Trigger Input Low Level</td>
<td></td>
<td></td>
<td>0.8(Max)</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Forward Voltage Monitoring Accuracy</td>
<td>N.A.</td>
<td>+/-10</td>
<td>N.A.</td>
<td>+/-10</td>
<td>mV</td>
</tr>
</tbody>
</table>

Notes: 1. Maximum Output Voltage is 0.5V less than the Power Supply Input Voltage. For instance, with a Power Supply Input Voltage of V_{dc} = 24V, the Maximum Output Voltage V_{max} would be V_{dc} - 0.5V = 23.5V.

TIMING SPECIFICATION

<table>
<thead>
<tr>
<th>Parameters</th>
<th>SLC-XAxx-x</th>
<th>SLC-XVxx-x</th>
<th>SLC-FAxx-x</th>
<th>SLC-FVxx-x</th>
<th>Unit</th>
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<tbody>
<tr>
<td>Timing Resolution</td>
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<td>20</td>
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<td>μs</td>
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<tr>
<td># of Data Points for Waveform Definition</td>
<td>128</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Trigger Pulse Width</td>
<td></td>
<td>100 (Minimum)</td>
<td></td>
<td></td>
<td>μs</td>
</tr>
<tr>
<td>Max Trigger Delay</td>
<td></td>
<td>25</td>
<td></td>
<td></td>
<td>μs</td>
</tr>
</tbody>
</table>

OPERATION CONDITION

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

DIMENSION AND WEIGHT

Dimension: 201mm(L) x 147mm (W) x 40mm (H)
Weight: 600g
With a world-class OEM design team, Mightex offers a broad range of customized solutions in order to meet individual customer’s unique requirements. Please call 1-416-840 4991 or email sales@mightex.com for details.