OPTOTRONIC®
Electronic LED Control Interfaces

Key System Features

- Utilizes pulse width modulation, (PWM) to control LED performance
- Lightweight, low profile
- Dimming range: 0-100%
- Long life
- Options available for analog DALI or DMX control protocols
- 10V-24 VDC input voltage
- Short circuit, overload and overheating protection
- UL and cUL recognized component
- 10V-24 VDC input voltage
- Options available for analog DALI or DMX control protocols
- Long life

OPTOTRONIC control interface modules are compact, electronically stabilized control interface units with input line voltages ranging from 10-24 VDC for use with most popular LED power supplies.

OPTOTRONIC control interfaces complete the system of innovative control gear and open up even more possibilities for dynamic control of LED based lighting solutions. They are ideal for use in color mixing applications in combination with multi-color LED modules.

The OPTOTRONIC DIM is a 1-Channel 0-10V dimmer for comfortable dimming of LED systems and is supplied power by OPTOTRONIC 10V or 24V power supplies. Dimming of the LED modules is performed by PWM (pulse width modulation) and the control input is isolated according to SELV requirements.

The OPTOTRONIC RGB SEQUENCER is designed for dynamic color chases of RGB LED systems. Sequence speed, brightness and any of the eight pre-programmed sequences can be selected via (3) x 1-10V control inputs, a particular color can also be permanently set if desired. Power is supplied by 10V or 24V OPTOTRONIC units and dimming is performed by PWM (pulse width modulation) and the output terminals are configured in a common (+) pole.

The OPTOTRONIC RGB DIM is a 3-Channel 0-10V dimmer for individual dimming 3 LED module strings that can be a combination of RGB or White LEDs. Power is supplied by OPTOTRONIC 10V or 24V power supplies. Dimming of LED module is performed by PWM (pulse width modulation) and the output terminals are configured in a common (+) pole.

The OPTOTRONIC RGB SEQUENCER is designed for dynamic color chases of RGB LED systems. Sequence speed, brightness and any of the eight pre-programmed sequences can be selected via (3) x 1-10V control inputs, a particular color can also be permanently set if desired. Power is supplied by 10V or 24V OPTOTRONIC units and dimming is performed by PWM (pulse width modulation) and the control input is isolated according to SELV requirements.

OPTOTRONIC control interfaces operate on the principle of pulse width modulation and are used on the secondary side of the power supply unit, i.e. wired between the OPTOTRONIC power supply and the LED modules.

In pulse width modulation, the power supply to the LED Modules is interrupted at a specific frequency. This permits individual adjustment of the required light output. In this context, the high frequency provides flicker-free lighting. Pulse width modulation technology guarantees a linear dimming characteristic with minimal color shift from the LED module.

Application Information

Sylvania OPTOTRONIC Control Interface
are ideally suited for:
- Backlighting signs and panels
- Path and roadway marking
- Step and seat marking
- Ambience lighting inside furniture
- Effect lighting
- Panel lighting
- Wall washing
- General lighting
- Cove lighting
- Facade lighting
- Any application where a variable amount of light is desirable
- Combining with multi-color LED modules for color mixing
- DALI Controllable Option

System Information

To complement the variety of LED modules, OSRAM SYLVANIA offers specifically matched OPTOTRONIC Power Supply Units with rated voltages between 10V and 24VDC.

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1-10V Input
DMX Input
DALI Input
OT DIM - White LED Applications
OTDMXRGBDIM - Color Changing LED Applications
OTDALIDIM - Touch DIM Capabilities
OTDIML - Same as OT DIM, with wire leads
OTRGBSEQUENCER - Color Changing LED Applications
OTRGBDIM - Color Changing LED Applications
OPTOTRONIC® Control Interfaces

Wiring Diagram (OTDIM)

Wiring Requirements:
- Input, load, and control wires:
  - Use 16 to 18AWG solid or stranded wire.

Wiring Diagram (OTRGBDIM)

Wiring Requirements:
- Input, load, and control wires:
  - Use 16 to 18AWG solid or stranded wire.

Wiring Diagram (OTDMXRGB)

Wiring Requirements:
- Input and load wires:
  - Use 16 to 18AWG solid or stranded wire.

Control Wires:
- Use a connector to join DMX cable from DMX controller to 16-18AWG solid or stranded wire to OTDMXRGB.

Wiring Diagram (OTi DALI DIM)

Wiring Requirements:
- Input and load wires:
  - Use 16 to 18AWG solid or stranded wire.

Control Wires:
- Non Polarity specific control input.

- OTDIM may be controlled by 0-10V DC controllers, 0-10V converters, or 100k Ohm linear potentiometers.
- The OTDIM has two outputs in parallel. The sum of the loads from the outputs must not exceed the maximum output of the OTDIM (52.5W at 10V and 120W at 24V).

- OTRGBDIM may be controlled by 0-10V DC controllers, 0-10V converters, or 100k Ohm linear potentiometers.

- OTDMXRGB can be controlled by DMX controllers providing protocols that meet USITT DMX-512A or DMX512 (DIN 56930-2).

- OTi DALI DIM can be controlled by DALI Interface or Touch-Dim (momentary contact).

Specifications subject to change without notice.
Wiring Requirements:
Input, load, and control wires:
Use 16 to 18AWG solid or stranded wire.

Wiring Diagram (OTRGBSEQUENCER)

Wiring Requirements:
Input, load, and control wires:
Use 16 to 18AWG solid or stranded wire.

Pre-assigned color sequences

<table>
<thead>
<tr>
<th>Sequences</th>
<th>scene 1</th>
<th>scene 2</th>
<th>scene 3</th>
<th>scene 4</th>
<th>scene 5</th>
<th>scene 6</th>
<th>scene 7</th>
<th>scene 8</th>
<th>control voltage</th>
<th>Resistor value</th>
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<tbody>
<tr>
<td>standard</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>&gt; 8 V</td>
<td>&gt; 80 kΩ</td>
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<tr>
<td>warm</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>&lt; 2 V</td>
<td>&lt; 20 kΩ</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>2-3 V</td>
<td>20-30 kΩ</td>
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<tr>
<td>intense</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>3-4 V</td>
<td>30-40 kΩ</td>
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<tr>
<td>pastel</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<td>n/a</td>
<td>n/a</td>
<td>4-5 V</td>
<td>4U-5U kΩ</td>
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<tr>
<td>summer</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>5-6 V</td>
<td>60-60 kΩ</td>
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<td>sunset</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>6-7 V</td>
<td>60-70 kΩ</td>
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<td>Tai Chi</td>
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<td>n/a</td>
<td>n/a</td>
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<td>n/a</td>
<td>n/a</td>
<td>7-8 V</td>
<td>70-80 kΩ</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice.
### OPTOTRONIC® Control Interfaces

#### Additional Specifications

Input Voltage Range: 9.5-25VDC  
Dimming Range: 0-100%  
Control Current: 0.6 mA max. for 0-10 units only.  
Temp. Range: -20°C to +50°C  
Max. Case Temperature: 70°C  

UL508 recognized unit (UL file# E23286 & E224357)  
ROHS compliant  

**OTi DALI DIM: UL Recognized unit: E320662**

#### System Life / Warranty

OPTOTRONIC Control Interfaces are warranted for 5 years. OPTOTRONIC Products are covered by the LED system warranty, a comprehensive LED module and power supply system warranty. For additional details, refer to the latest version of the LED System warranty bulletin.

### For all units:

**Dimensions:**

6.77" L x 1.65" W x 0.79" H  
(172mm L x 42mm W x 20mm H)

**Packaging:**

Quantity: 20 pieces/carton  
Weight: 0.165 lbs ea. (approx.)  
3.3 lbs/carton

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**Control Current:** 0.6 mA max. for 0-10 units only.  
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**Max. Case Temperature:** 70°C  

#### SPECIFICATION DATA

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Nominal Input Voltage (VDC)</th>
<th>Max.1 Input Current (A)</th>
<th>Control Voltage (VDC)</th>
<th>Max. Output Power per channel (W)</th>
<th>Max.2,3 Output Power (W)</th>
<th>Max. Output Current per channel (A)</th>
<th>Output Frequency (Hz)</th>
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</thead>
<tbody>
<tr>
<td>51516 OT DIM</td>
<td>0-10VDC</td>
<td>0-52.5</td>
<td>0-120</td>
<td>52.5</td>
<td>120</td>
<td>2.5</td>
<td>135</td>
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<td>49889 OT DIM L</td>
<td>0-10VDC</td>
<td>0-52.5</td>
<td>0-120</td>
<td>52.5</td>
<td>120</td>
<td>2.5</td>
<td>135</td>
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<td>51517 OTRGBDIM</td>
<td>0-10VDC</td>
<td>0-21</td>
<td>0-48</td>
<td>60</td>
<td>140</td>
<td>2</td>
<td>N/A</td>
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</tr>
<tr>
<td>51518 OTRGBSEQUENCER</td>
<td>0-10VDC</td>
<td>0-21</td>
<td>0-48</td>
<td>60</td>
<td>140</td>
<td>2</td>
<td>N/A</td>
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<td>51600 OTDMXRGS</td>
<td>-7 to 12VDC</td>
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<td>0-48</td>
<td>60</td>
<td>140</td>
<td>2</td>
<td>N/A</td>
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<tr>
<td>51349 OTI DALI DIM</td>
<td>DALI</td>
<td>0-50</td>
<td>0-100</td>
<td>50</td>
<td>100</td>
<td>2.5</td>
<td>350</td>
<td></td>
</tr>
</tbody>
</table>

1: For Class 2 applications maximum input current should be limited to 5A.  
2: For Class 2 applications maximum output power would be 47W @ 10V and 97W @ 24V.  
3: Max. power loss is 4W for all control interfaces at 10V and 24V input voltages.

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Item Number 49889 OT DIM L comes with leads with lengths as follows:

- **Supply Lead:** 4.5"  
- **0-10V Lead:** 16.5"  
- **Output Leads (if ordered with leads):** 4.5"