



PowerLED PWM Dimming Control Reference Manual - ILIM80140



Overview

Imtra's LED single Channel Dimmer Module (ILIM80140) provides dimming for "PWM Enabled" PowerLED Downlights and supports a range of lighting configurations and control methods.

The ILIM80140 can control a large number of PowerLED Downlights, only limited by the total current being drawn. It supports PWM current switching of up to 7A (@ 12VDC, 84W and @ 24V, 168W of power). With an external switch it can also control Bi-color light fixtures.

Control interfaces are provided to support:

- Single and dual momentary push buttons
- 0-10V Analog control (external voltage or potentiometer)
- 4-20mA Analog control

Specifications

ILIM80140

Length	2.75"
Width	3.39"
Height	2.30"
Input Voltage Range	10-40VDC
Capacity	Up to 7A*
Control Interface	N.O. Contacts
IP Rating	IP40

***Note:** Exceeding maximum current can permanently damage dimmer module.

Installation

The ILIM80140 dimmer may be mounted on standard 35mm DIN Rail or via the wall suspension brackets (provided). When mounting on a vertical surface, be sure that the orientation is such that the air vents are on top and bottom to allow for sufficient air flow.



Wiring and Controls

The ILIM80140 PowerLED PWM Dimmer is used to operate PowerLED lights with on/off, dimming, and dual color control. Before making any connections, be sure all power in the circuit is turned off at the breaker. To install your PowerLED Dimmer, connect the wires in accordance with the wiring schematics on the following pages. Failure to follow the wiring schematic exactly as shown could result in failure and permanent damage to the dimmer.

The various modes are set using the DIP SW settings (shown below) as indicated in the wiring diagrams:



The mode may be changed by turning power off to the dimmer, using a small screw driver to set the appropriate DIP Switch settings ("1" is "ON", "0" is "OFF"). The new mode will be recognized by the dimmer the next time it is powered up.

The green LED indicator located next to the DIP Switch will flash when the system is powered up but lights are commanded “off” (in standby) and will be “on” (steady) when the lights are being commanded “on”.

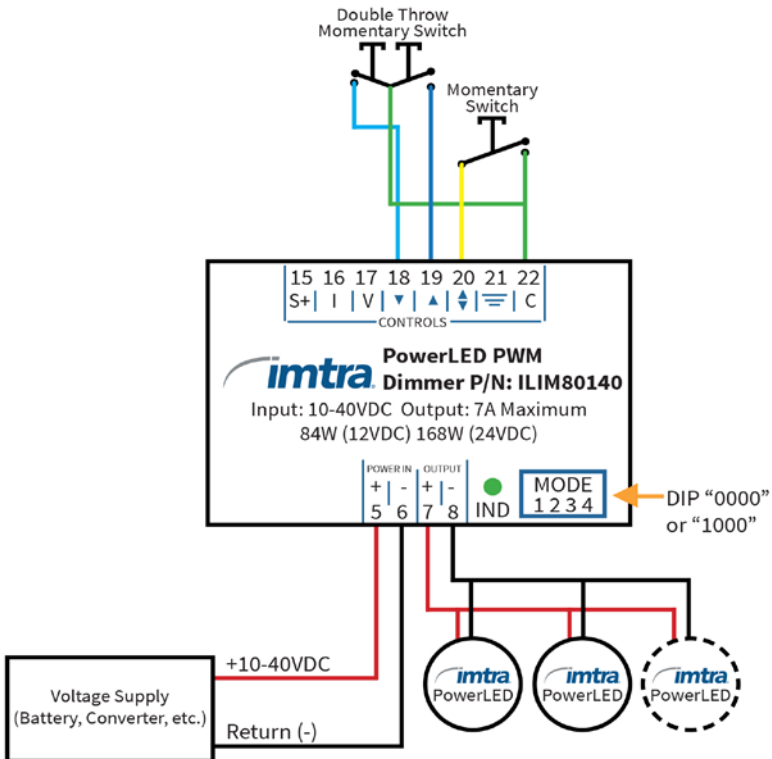
1. Push button Controls: Standard Modes

This wiring configuration is used to manually, independently control single color PowerLED fixtures on each channel using single and double momentary switches.

This Mode is selected by setting “0000” or “1000” on the DIP SW, with power off to the dimmer.

MODE: 0000 (Default Digital Controls – lights off when power applied)

MODE: 1000 (Digital Controls – lights return to last state when power applied)



- For single momentary push button operation
 - Tap one push button to turn “on” or “off”
 - Press and hold push button to dim “up” or “down”

- For double momentary push button operation
 - Tap the button wired to the UP terminal to turn “on”
 - Tap the button wired to the DOWN terminal to turn “off”
 - Press and hold corresponding push button to dim “up” or “down”

- When the PowerLED Dimmer and lights are set to off, a tap of the single or UP momentary push button will always turn them on to the previous setting.

- When the PowerLED Dimmer and lights are set to off, pressing and holding the single or UP momentary push button will increase intensity up from 0%.

Power Up Default

When the unit is set to Mode “0000” and power is turned off and back on, the default setting when powered up again is always off.

When the unit is set to Mode “1000” and power is turned off and back on, the default setting upon power up will be the last DIM level selected.

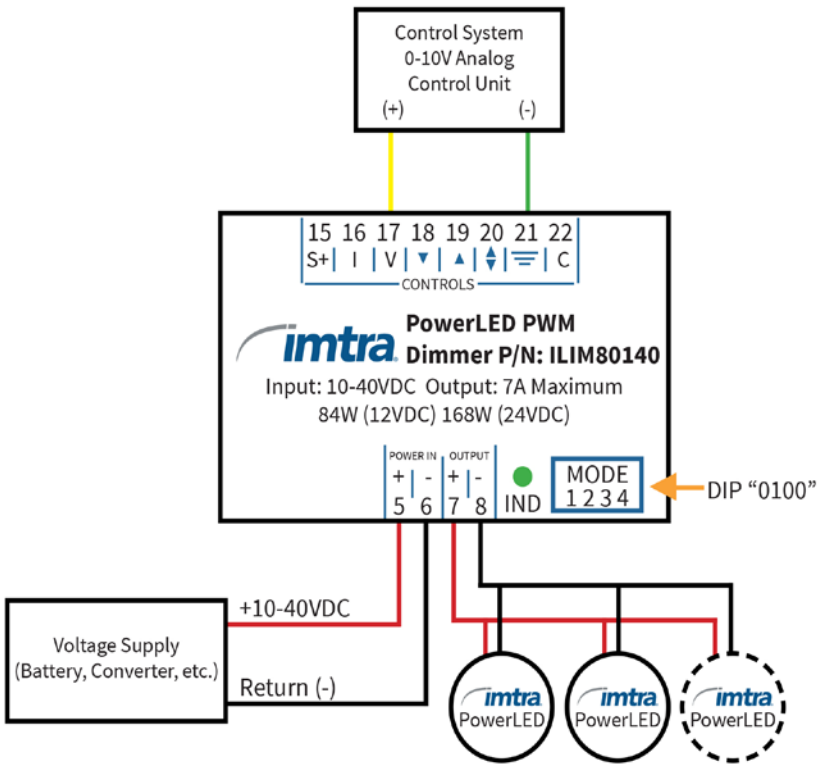
2. Analog External Control (0-10V)

This wiring configuration is used to independently control PowerLED lights from external yacht central control systems that employ 0-10V analog control signals. This Mode is selected by setting “0100” on the DIP SW, with power off to the dimmer.

For 0-10V interfaces, wire the positive signal to the “V” terminal & the return signal to “ground” as shown in the wiring diagram.

The PWM dimming level & 0-10V signal input are linearly related (0V - 0%; 10V - 100%).

MODE: 0100 (0-10V Analog External Control)



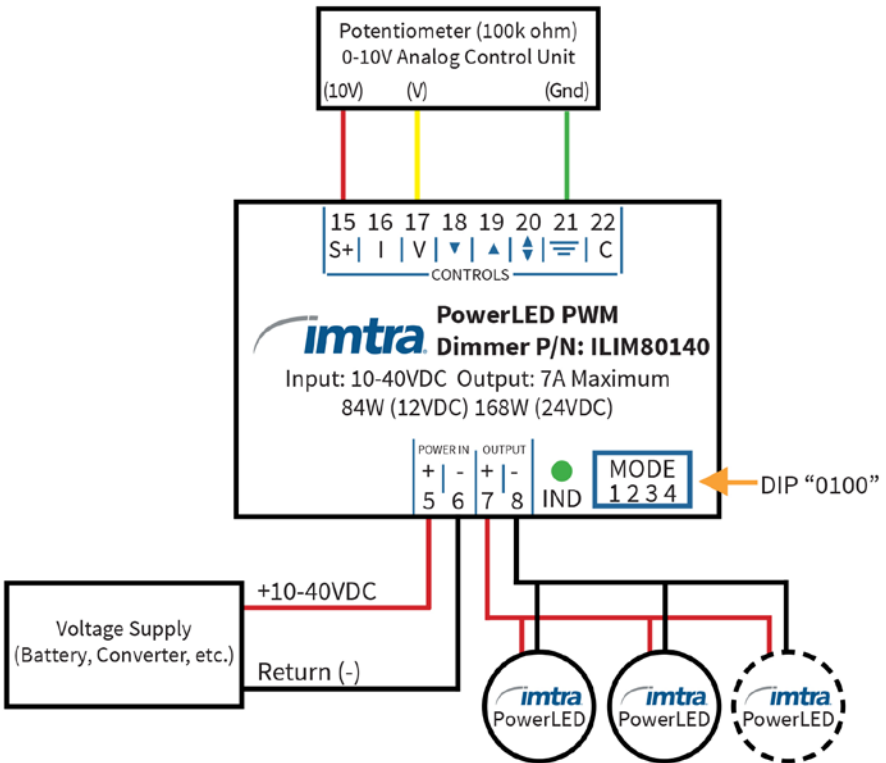
3. Potentiometer Control (0-10V)

This wiring configuration is used to independently control PowerLED lights from a dedicated potentiometer (100k ohm). This Mode is selected by setting “0100” on the DIP SW, with power off the dimmer.

For 0-10V interfaces using a potentiometer, wire the “S+” source to the input lug of the potentiometer, the positive DIM signal (wiper on pot) to the “V” terminal and the return signal to “ground” as shown in wiring diagram.

The PWM dimming level and 0-10V signal input are linearly related (0V - 0%; 10V - 100%).

MODE: 0100 (0-10V Analog Potentiometer Control)



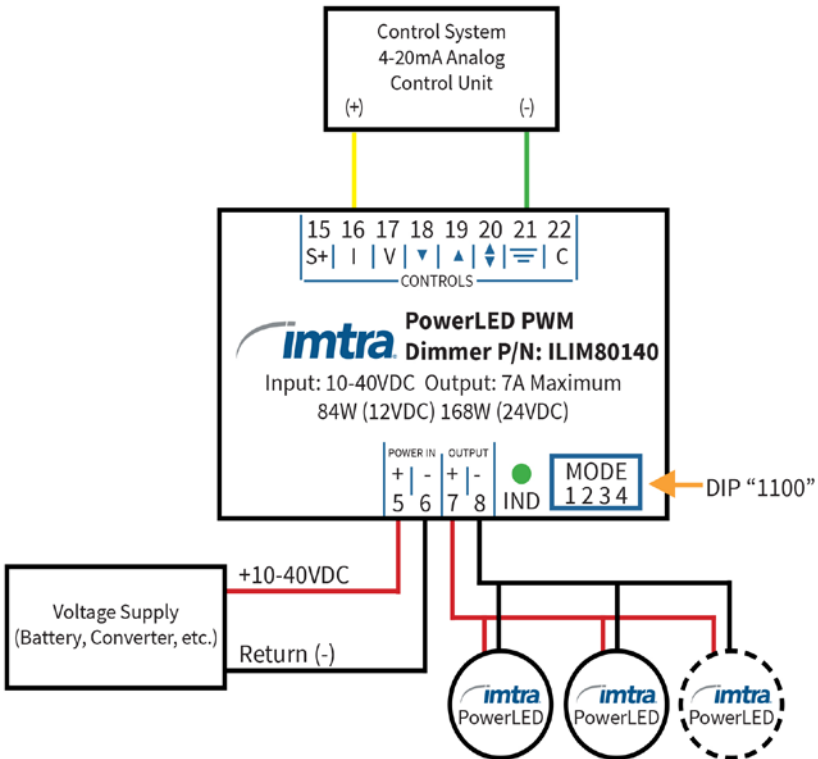
4. Analog External Control (4-20mA)

This wiring configuration is used to independently control PowerLED lights from external yacht central control systems that employ 4-20mA current loop analog control signals. This Mode is selected by setting “1100” on the DIP SW, with power off to the dimmer.

For 4-20mA interfaces, wire the positive signal to the “I” terminal and the return signal to “ground” as shown in the wiring diagram.

The PWM dimming level and 4-20mA signal input are linearly related (4mA - 0%; 20mA - 100%).

MODE: 1100 (4-20mA Analog External Control)



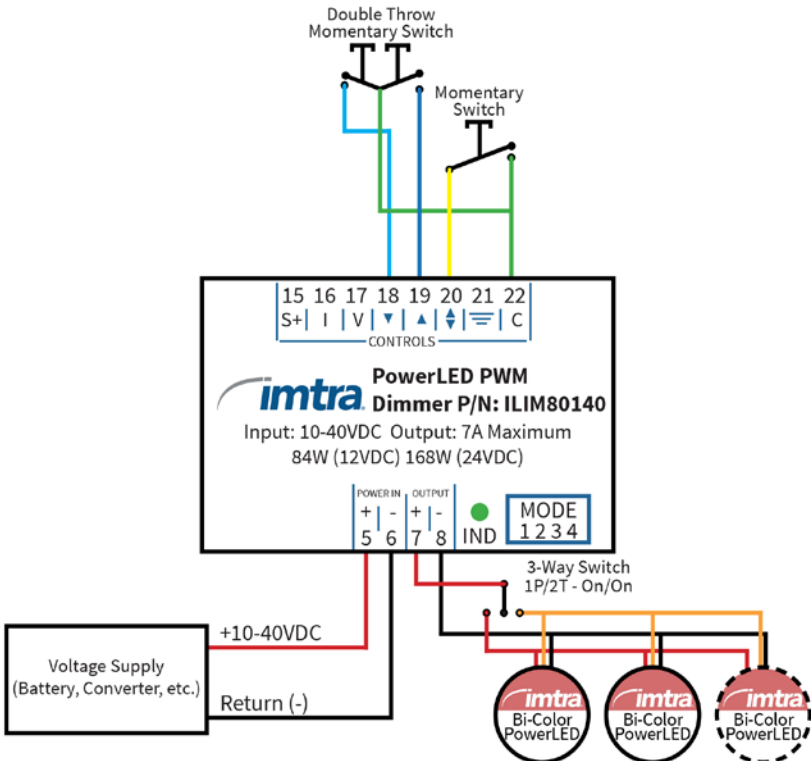
5 a. Push button Controls: Bi-Color Lights

This wiring configuration is used to control Imtra Bi-color PowerLED lights using Single and Double Momentary switches. A separate 3-Way Control Switch is employed to control either color of the Bi-color light as shown in the diagram.

This installation scheme can be employed with any mode of dimmer operation. Push button control (Mode 0000 or 1000) is shown in the wiring example below.

- Select either “white” or “red/blue” using a 3-Way Control Switch
- For single momentary push button operation
 - Tap push button to turn “on” or “off”
 - Press and hold push button to dim “up” or “down”
- For double momentary push button operation
 - Tap the button wired to the UP terminal to turn “on”
 - Tap the button wired to the DOWN terminal to turn “off”
 - Press & hold corresponding push button to dim “up” or “down”

Bi-Color Control: (Any Mode)



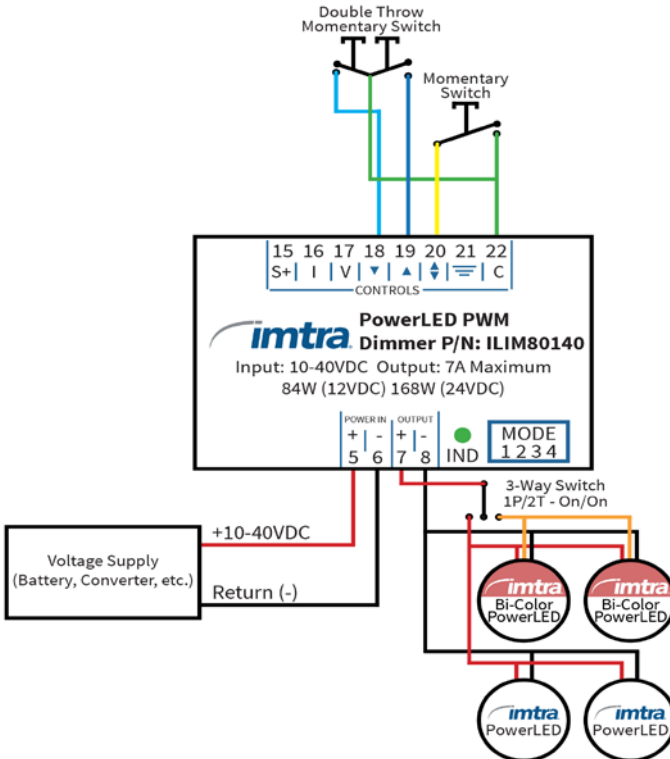
- When the PowerLED Dimmer and lights are set to off, a tap of the single or UP momentary push button will always turn them on to the previous setting.
- When the PowerLED Dimmer and lights are set to off, pressing and holding the single or UP momentary push button will increase intensity up from 0%

5 b. Push button Controls: Bi-Color Lights & Single Color Lights (mixed)

The user may operate a mix of “white only” and Bi-color light fixtures on same dimmer circuits. The white only lights will only come on with the “white” channel of the Bi-color. See wiring in diagram below.

Also, if Red or Blue “Only” light fixtures are being used with Bi-color lights, they may be connected on the “color” channel (orange wire circuit) and will come on when the color channel of the Bi-color units are commanded on.

Bi-Color Control: (Any Mode)



Limited Warranty

Imtra warrants these dimming control products for 2 years from the date of purchase. If the dimmer module should cease to function within 2 years, return it to Imtra for repair or replacement.

This warranty does not apply to damage resulting from actions of the user such as misuse, improper wiring/installation, operation outside of specification, improper maintenance or repair, unauthorized modification, lightning strike or damage from a power surge.

Imtra specifically disclaims any implied warranties, merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Imtra's total liability is limited to repair or replacement of the product.

The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

If it should become necessary to return a fixture for service during or beyond the warranty period, please refer to Imtra's standard Return Policy as detailed on Imtra's website (www.imtra.com) or call Imtra customer service at (508) 995-7000.

No returns are accepted without a Return Authorization (RA) number.



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