0~10V Dimming Controller Manual

GL7097 / GL7098

GL7097 1500W

GL7098 3000W

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1 Introduction

GL7097/GL7098 Dimming Controller is designed to control the AC phase-cut dimming LED lights and to increase or decrease their brightness in poultry houses, pig houses and those of other livestock. It can also be connected via a controlling computer, using its 0-10V signal to follow its set programmes.

Independently, the light intensity can also be controlled by the manual control function of this dimmer unit.

The GL7097 supports dimming up to 7 amps and a maximum load of 1500W at 200V~240V of power. The GL7098 supports dimming up to 14 amps (2*7 amps) and a maximum load of 3000W at 200V~240V of power. In the 110V power supply scenario, the maximum load is halved.

1.1 Device Description

The GL7097 is an one-channel 0-10V input and one-channel AC dimming output control device. The GL7098 is an one-channel 0-10V input and two-channels bound together AC dimming output control. The DualMos Trailing-edge phase-cut dimming is compatible with most LED lamps.

Main Features:

- Highly reliable DualMos Trailing-Edge phase-cut dimming technology, 0-100% flicker-free throughout
- 0-100% brightness dimming, simulate sunrise and sunset, improve animal welfare
- Support slave control mode 0-10V control signal
- Support potentiometer manual dimming,
- Wall-mounted installation
- Waterproof grade IP66
- Five-year warranty

NOTE	*Although GL7097/GL7098 supports most light bulbs, it is recommended to use only one type of light bulb from the same manufacturer in a channel.*

1.2 Device interface

This section mainly introduces the intuitive interface and input/output electrical connection interface of the equipment, and briefly describes the screen interface, Rotary Potentiometer and electrical wiring.

Figure 1-1 GL7097 device interface and wiring outgoing view

Table 1-1 GL7097 Device User Interface Item Description Table

#	Item	Detailed Description
1	Toggle Switch	Move the toggle switch to select different working modes. Move it to the left to set EXT 0-10V. Move it to the middle position to set OFF. Move it to the right and adjust the brightness of the light through the rotary potentiometer.
2	Rotary Potentiometer.	It is used to adjust the light brightness conveniently in manual mode. turn clockwise to increase the brightness, turn counterclockwise to decrease the brightness.
3	Dimming output line.	The AC phase-cut output line is connected to the lamp. There is only L1 output.
4	0-10V	The 0-10V interface signal of the computer.
5	Power support cable	Input power cord to connect to the main power supply circuit.

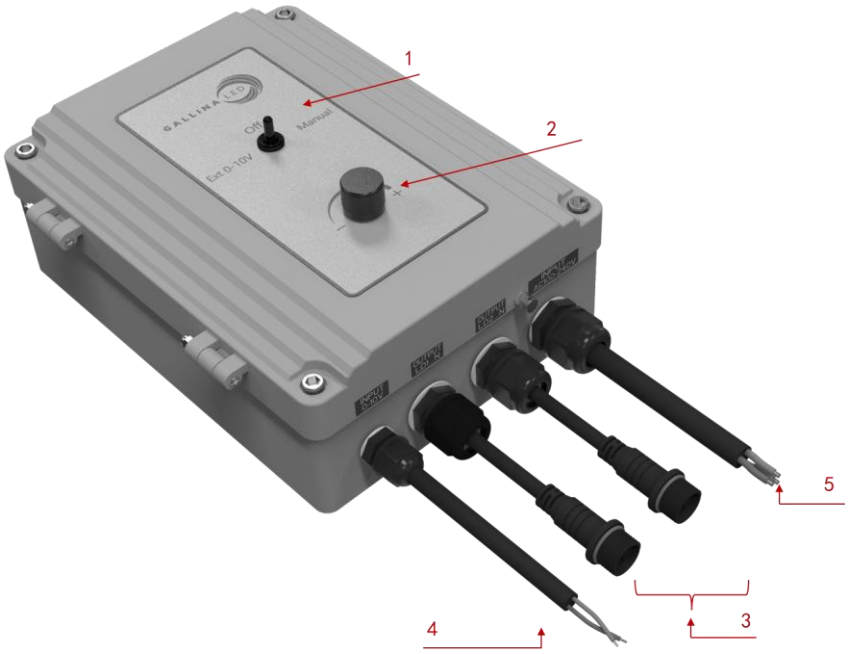

Figure 1-2 GL7098 device interface and wiring outgoing view

Table 1-2 GL7098 Device User Interface Item Description Table

#	Item	Detailed Description
1	Toggle Switch	Move the toggle switch to select different working modes. Move it to the left to set EXT 0-10V. Move it to the middle position to set OFF. Move it to the right and adjust the brightness of the light through the rotary potentiometer.
2	Rotary Potentiometer.	It is used to adjust the light brightness conveniently in manual mode. turn clockwise to increase the brightness, turn counterclockwise to decrease the brightness.
3	Dimming output line.	The AC phase-cut output line is connected to the lamp. There are two output L1/L2 channels, but the brightness of both channels is the same.
4	0-10V	The 0-10V interface signal of the computer.
5	Power support cable	Input power cord to connect to the main power supply circuit.

1.3 Technical Detail

Table 1-3 GL7097 Technical Detail Table

Item	Detailed Description
Dimming Technology	DualMos Trailing-Edge Dimming
Input Voltage	100V~240VAC 50/60Hz Single-phase power supply
Peak Output Load@220VAC	Max7A 1500W
Peak Output Load @110VAC	Max7A 770W
0-10VDC Analog Input Resistance	100Kohm
Operating Temperature	0℃~50℃
Humidity range	maximum humidity 85%
Waterproof and Dustproof grade	IP66
Case	Cast aluminum spray
Fuse	15A 250VAC slow blow（6.25*32mm）replaceable
Interface	Rotary Potentiometer for manual Brightness Toggle Switch for Ext 0-10V/Off/Manual
Size	221*155*95mm（1500W）

Table 1-4 GL7098 Technical Detail Table

Item	Detailed Description
Dimming Technology	DualMos Trailing-Edge Dimming
Input Voltage	100V~240VAC 50/60Hz Single-phase power supply
Peak Output Load@220VAC	Max14A 3000W(Two Output Line)
Peak Output Load @110VAC	Max14A 1500W(Two Output Line)
0-10VDC Analog Input Resistance	100Kohm
Operating Temperature	0℃~50℃
Humidity range	maximum humidity 85%
Waterproof and Dustproof grade	IP66
Case	Cast aluminum spray
Fuse	15A 250VAC slow blow（6.25*32mm）replaceable
Interface	Rotary Potentiometer for manual Brightness Toggle Switch for Ext 0-10V/Off/Manual
Size	251*192*90mm（3000W）

2 Using the Dimming Controller

2.1 Ext 0-10V

Move the toggle switch to select the required mode. Move it to the left to set EXT 0-10V. the brightness of the LED light is controlled by the 0-10V signal of the customer's computers.

2.2 Off

Move the toggle switch it to the middle position to select OFF.

2.3 Manual

Move the toggle switch to the right to manually adjust the brightness of the light through the rotary potentiometer.

Rotary Potentiometer is used to adjust the light brightness conveniently in manual mode; turn it clockwise to increase the brightness; turn it counterclockwise to decrease the brightness.

3 Installation

This chapter details how to install the Dimming Controller. Including fixing the controller to the wall, electrical safety, electrical wiring, light sensor connection, etc.

	*The installation of the Dimming Controller must be carried out by an authorized electrician.* *During installation, power must be disconnected to avoid electric shock and other damage.* *To avoid exposing the Dimming Controller to harmful gases or high humidity, it is recommended to install it in the operating room.*

	*Installation Category II (Overvoltage Category)*

	*The wires that power the Dimming Controller circuits also power the lighting.* *The cross section of the copper cable must be no less than 10mm2.* *Make sure the wire is used with the correct load.*

	*To ensure proper operation of the dimmer, do not connect any conductive devices to the output (eg transformers, reactors, chokes).*

3.1 Fixing the Dimming Controller to the wall

In the product delivery package, it includes the Dimming Controller body, stainless steel mounting bracket, and M4 screws, which is convenient for users to install on the wall.

First, use the four M4 screws attached to the delivery list and refer to the following figure to fix the mounting bracket to the main body of the Dimming Controller. Next, use four self-tapping screws to fix the mounting bracket (together with the Dimming Controller) on the wall.

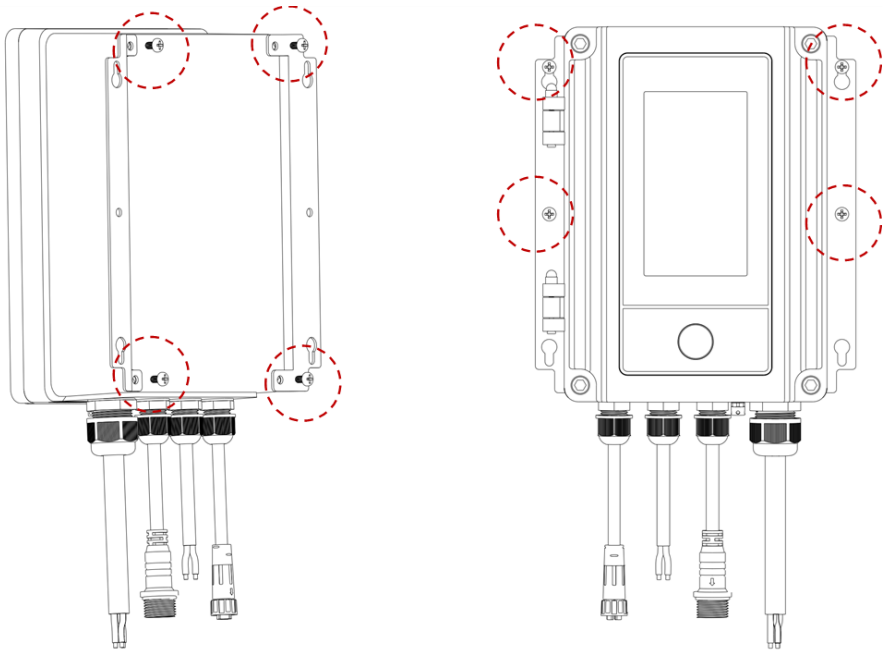

Figure 3-1 GL7097 fixed to wall installation diagram

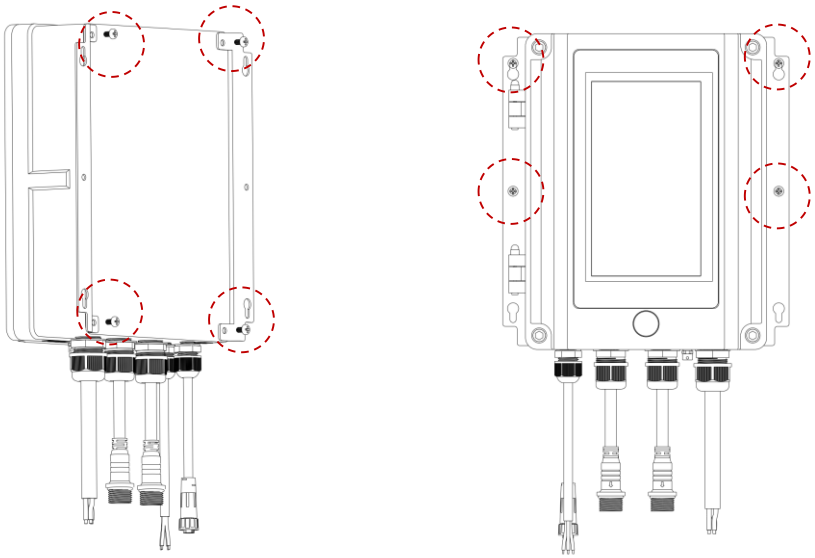

Figure 3-2 GL7098 fixed to wall installation diagram

NOTE	*For the convenience of user installation, the wall-mounted installation method of pre-fixing the wall screws first, and then hanging the device on the screws is supported.* *Mark the position of the mounting screws on the wall, and use tools to pre-fix the top mounting screws on the wall to the wall.* *Hook the GL7097/ GL7098 onto the pre-fixed screws and tighten the top two screws.* *Install the screws on the bottom of the GL7097/ GL7098 and lock them.*

3.2 AC Line Wiring Diagram

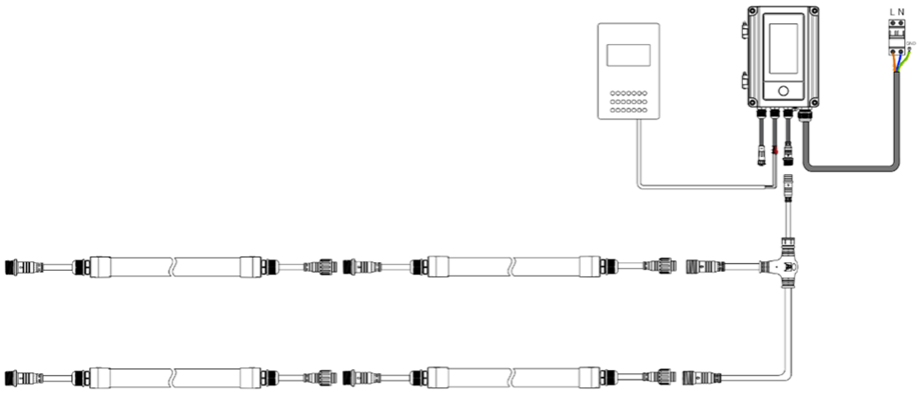

Figure 3-3 GL7097 Wiring Connection diagram

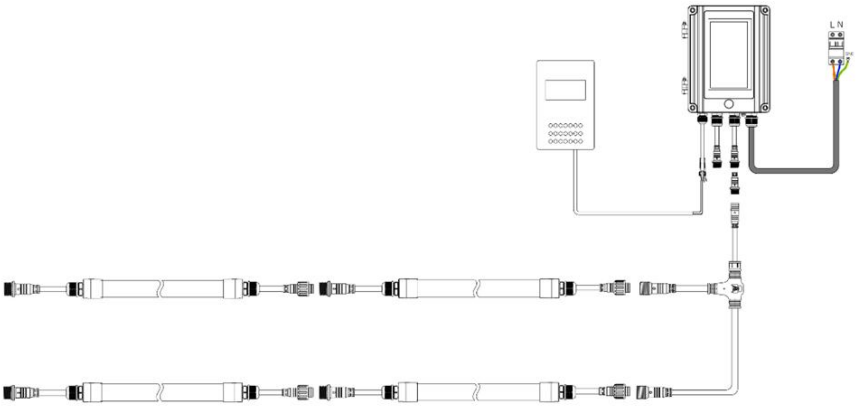

Figure 3-4 GL7098 Wiring Connection diagram

Please connect the dimming controller to the mains power supply.

Dimming Controller main power supply line brown line is connected to L of the main power supply circuit, blue line is connected to N of the main power supply circuit, yellow and green lines are connected to PGND (Earth).

Pass the desired light cable through the cable bracket on the bottom of the device, and connect it to the dimming output terminal block as indicated in the wiring diagram and lock it tightly.

3.3 0-10V signal connection

Refer to the figure in the previous section.Connect the 0-10VDC (+) and COM (–) of the superior breeding controller to the "0-10V+" and "0-10V -" of the Dimming Controller.

⚠	*The 0-10V signal is a DC safe voltage signal that can be touched by the human body, and must have sufficient electrical safety distance and isolation and insulation measures from the AC signal.*

3.4 Inspection

After the installation is completed, check the line connection again, after confirming that the connection is correct, close the air switch of the main power supply circuit, and run the Dimming Controller for several hours to check whether it is running normally.

3.5 Environmental protection

Recycle raw materials instead of disposing as waste. The controller, accessories and packaging should be sorted for environmental-friendly recycling. The plastic components are labeled for categorized recycling.

4 Troubleshooting

Table 4-1 Troubleshooting Table

#	Problem Description	Troubleshooting
1	When the power is on, the LED light does not light up	Check mains power supply Check the connection of the output line, adjust the output brightness to 100%, and check the voltage value of the output line with a multimeter.
2	At low voltage levels, the light flickers.	Make sure there are no conductive devices (such as transformers and power coils) in the electronic load system. Contact technical support.
3	Lights are always at maximum brightness or cannot be changed.	Contact technical support.

5 Accessories

#	Accessories	Qty
1	Stainless steel mounting bracket	2PCS
2	M4 Screw	5PCS (1PCS is a spare)
3	15A Back-up Fuse	1PCS (GL7097 1500W) 2PCS (GL7098 3000W)

Please follow this installation guide very carefully and pay attention to the instructions given. If there are any problems, please contact us at the following address.

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