Revolution²

RLC1 Digital Lighting Controller

Owner's Manual
12 September, 2018

Congratulations on your new all-digital lighting controller! The RLC1 can control up to 512 lights in two zones with up to 256 lights in each zone. The RLC1 can control any Revolution or compatible light such as the Phantom, MaxiBright, etc.

This manual will tell you to to mount, connect and operate your new controller.

The Box Contains

- RLC1 Digital Lighting Controller
- Mounting plate
- Mounting hardware
- Two (2) temperature sensors
- 6v DC power pack (120v-240v)
- One (1) RJ-14 Data Cable
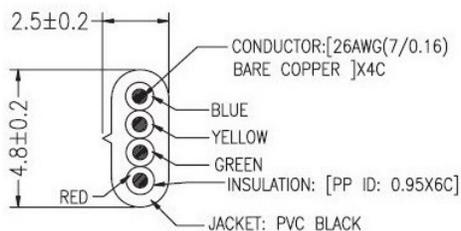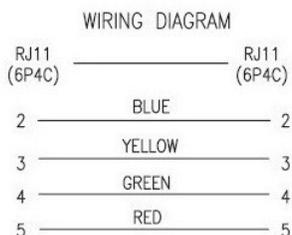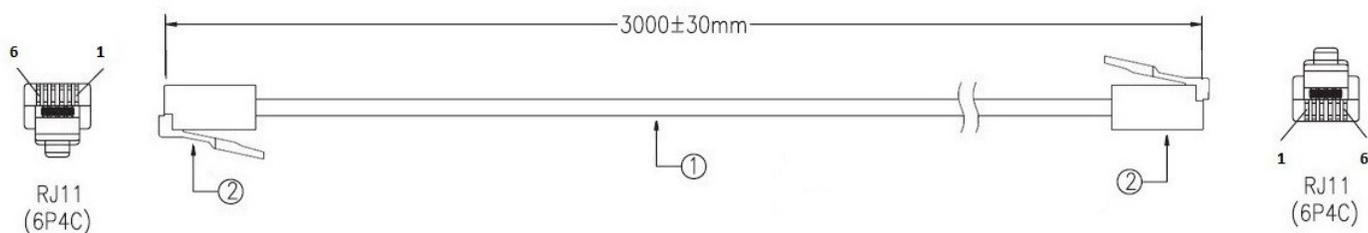- This instruction booklet (right?)

Installing Your Controller

Traditional lighting controls use mechanical relays to power ballasts on and off. The RLC1 uses a low voltage digital data stream to switch, dim, and boost any Revolution, Phantom, MaxiBright or other ballasts equipped with a Revolution-style RS-485 data port. The controller has two temperature sensors (one for each zone), and has the capability of automatically dimming lights during high temperatures and even shutting down lights at extreme temperatures. Ballast control wiring is done with common telephone cables (RJ14 plugs) which can be used to daisy-chain the ballasts together. Compatible ballasts and lighting systems include a cable and splitter for the RS-485 data port.   The RLC1 uses RJ14 splitters and RJ14 cables up like this:
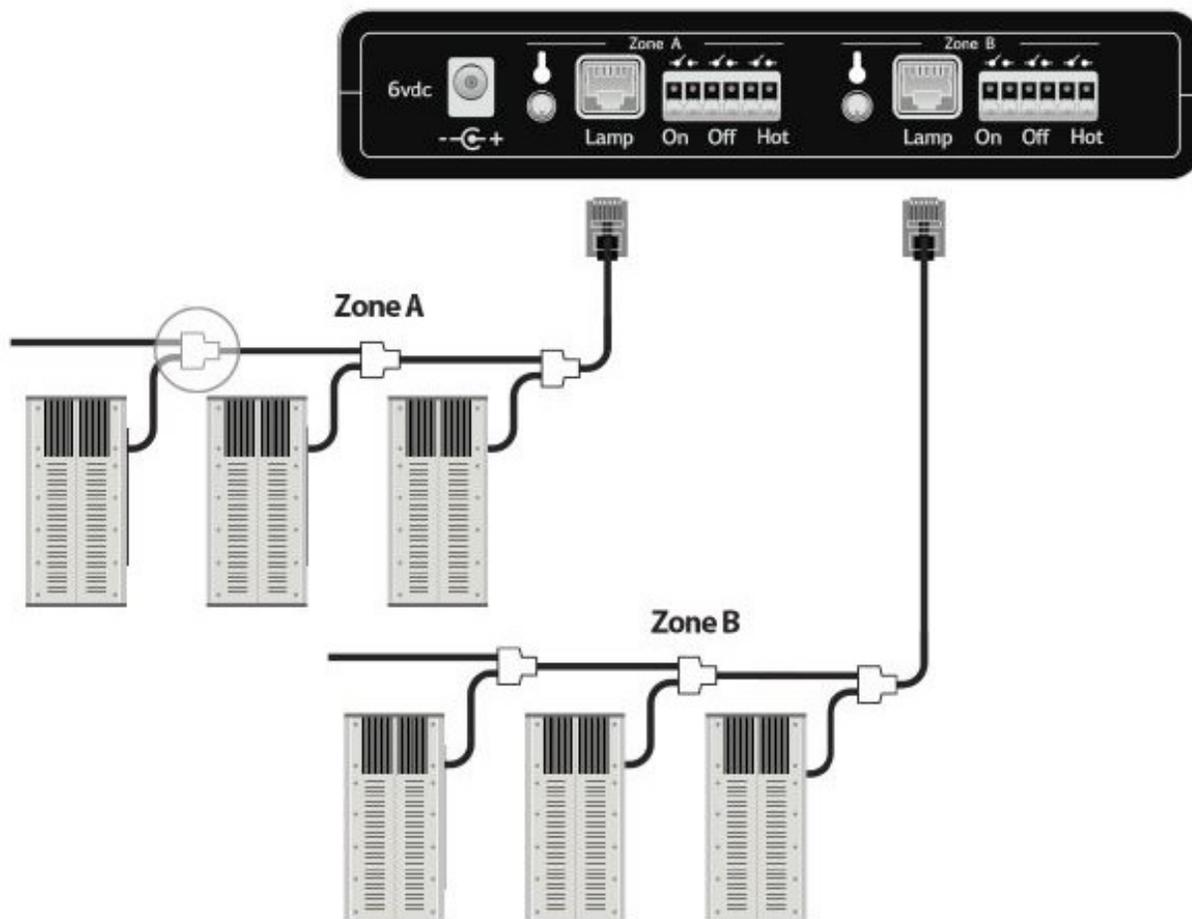
These are the data cables we supply. If you get longer or different ones, make sure they are wired like this.

WIRING DIAGRAM

RJ11 (6P4C)		RJ11 (6P4C)
2	BLUE	2
3	YELLOW	3
4	GREEN	4
5	RED	5

CABLE CONFIGURATION

CONDUCTOR:[26AWG(7/0.16) BARE COPPER]X4C
BLUE
YELLOW
GREEN
INSULATION: [PP ID: 0.95X6C]
RED
JACKET: PVC BLACK

②	PLUG	RJ11 PLUG 6P4C INSULATION PC CLEAR GOLD PLATED	2	
①	CABLE	UL20251,26AWG*4C(7/0.16BC) PVC JACKET COLOR: BLACK	AS	
ITEM	PART NAME	DESCRIPTION	Q'TY	REMARK
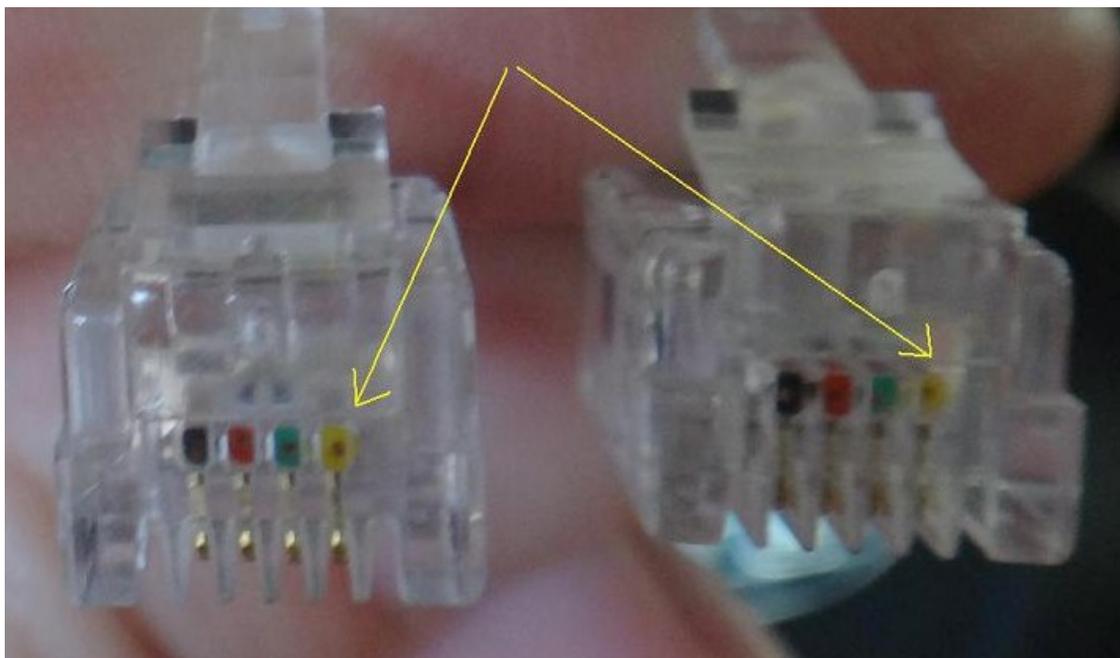
Looking at the cable ends in the pic above, you'll see the wires are the same by color, pin 1 to 1, pin 2 to 2, etc. on each connector. If you get RJ-type cables from a local source, make sure they are straight-through and look like this. RevMicro has the right cables of all sizes should you need them, or http://digikey.com is a good source in the USA.

Mounting the Controller

The RLC1 is designed to be wall mounted. This is easy to do using its removable back plate, which has four holes that can be used for mounting. The top center hole is a "keyhole" style hole which can be used with a single large screw, so that the plate is hung on the screw head. For a more secure alternative, there are also three smaller holes in the plate which can be used to screw it tightly to a wall surface. The lateral measurement between the top two of these holes is 3⅛", and the lower hole is ¾" below the top two, centered between them. Once the back plate is secured to the wall surface, the RLC-1 unit can be snapped onto the back plate.

Once the RLC1 is securely mounted to the wall, plug the included AC adapter into a power outlet and connect the other end to the RLC1's AC input jack on the bottom panel. Next plug the temperature probes into the corresponding jacks on the bottom panel and run your probe cables their full length up to and across the ceiling if possible, toward the center of the grow space. Ideally, suspend the probes down into the space above the plant canopy if possible. Take care not to stress or damage the probe cables when securing them to walls and ceilings.

Using the Controller

The RLC1 is designed to be really easy to use:

	Page moves from page to page;
	Next moves from field to field
	Up and **Down** make changes
	Enter saves the data.

- If you change your mind on something, simply press **Page** to go to another page without saving.

- If you get called away in the middle of changing something, RLC1 goes back to the Main screen without saving after 30 seconds.

- The blinking underline indicates the cursor position.

- That's all there is to it!

Here's how to set your RLC1 up in about 5 minutes:

1. When the RLC1 powers up, the display will default to the Main page showing zone temperatures, power levels and lights on or off as Day / Night.

2. Press the **Page** button to get to the Setup page where you can set the Date, Time, and Time Format (12 or 24 hours). You can also setup to show Power in W or %, and Temperature in degrees F or degrees C.

3. Press the **Page** button until you bring up Zone A to set up your first room. Each Zone page lets you choose the type of light you have and the size ballast driving it. A 1000w HPS like the DEva has six (6) power settings while a 315w CMH has two.

   Set this for the type and size light you have.

   You can set time for Lights On, Lights Off, what temperature to start Dimming and what temperature to Stop and switch the lights off.

   Some light types (like HPS) have the optional Sunrise/Sunset function where you can choose how many minutes to gently bring the lights up to(and down from) full power. That's shown as S/R above.

   You can also set the Delay function to delay the lights coming back on after a power outage. The RLC1 has an internal clock and starts counting when when the power goes out so a 30 minute on-delay will only have 10 minutes to run if the power comes back on in 20 minutes. This minimizes change to your photoperiod.

4. Press the **Page** button to bring up Zone B and set up your second room the same way.
   NOTE: You can change the names from Zone A and Zone B to whatever you like best.
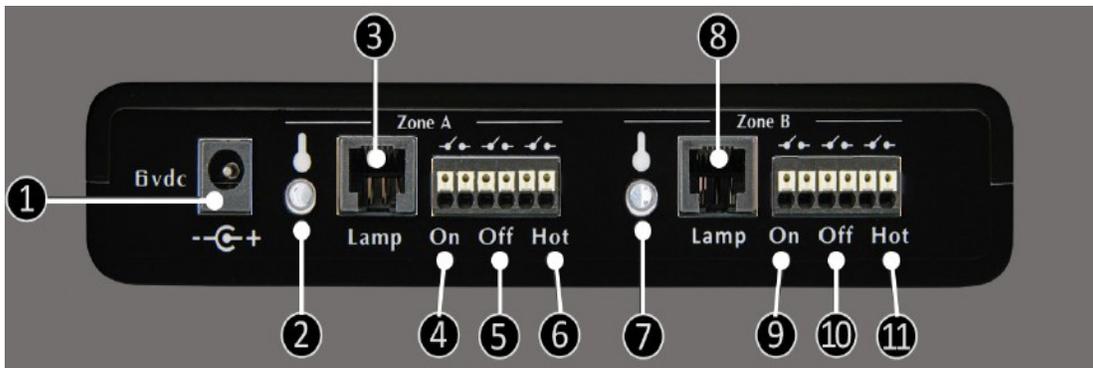
   In this example, Zone B is an Avici 1000w LED. When you choose LED, you can also select spectrum presets for Clone, Veg, Flower and Finish. The Flower preset is shown in the photo at right.

   The Blue / White / Red levels run from 0-10 and can also be changed individually as desired for custom spectra.

External Connections

The bottom of the RLC-1 has eleven (11) connectors:

1. Power (6v DC)

2. Zone A temperature sensor
3. Zone A Communications port to lights
4. Zone A Low-voltage external equipment trigger for Lights On
5. Zone A Low-voltage external equipment trigger for Lights Off
6. Zone A Low-voltage external equipment trigger for over temperature

7. Zone B temperature sensor
8. Zone B Communications port to lights
9. Zone B Low-voltage external equipment trigger for Lights On
10. Zone B Low-voltage external equipment trigger for Lights Off
11. Zone B Low-voltage external equipment trigger for over temperature

External triggers are two wires, dry contacts, ½ amp maximum.