



Dual Channel Dew Controller

User Instructions

Introduction

To manage the heating of **R-Sky** heaters effectively, a controller is essential. The controller is a compact electronic device that smoothly adjusts heating power using PWM (Pulse Width Modulation). This design significantly conserves battery life—crucial in field conditions.

This simple and affordable controller is designed to manage the heating of R-Sky heaters. The Dual Channel Dew Controller is a versatile solution that allows you to efficiently control heaters in various combinations and is highly recommended for most users.

The controller is user-friendly. Simply connect the dew heaters to the controller, then connect the controller to a 12V power source. Adjust the desired power level with the control knob—no extra buttons, glowing screens, complicated menus, or external apps. Just switch it on and start observing.

General Information

The Dual Channel Dew Controller operates from a 12V DC power source. This can be any 12V battery or an AC adapter (120V/240V) capable of providing 12V DC output.

- **Battery selection:** The battery capacity should not be less than 7 Ah (7000 mAh).
- **Power adapter selection:** The current output should be at least 5A (5000 mA), ideally 6A or more. It is highly recommended that the adapter includes modern protection features against short circuits, overheating, etc.

Specifications

- Four Outputs: Control multiple heaters simultaneously.
- Two Control Channels: Each channel independently manages a pair of outputs.
- Power Connector: Includes a cigarette lighter plug with an indicator and fuse.
- Power Cord Length: 4 feet (1.2 meters).
- Power Supply: 12V DC.
- Maximum Current per Channel: 4A.
- Maximum Total Current: 5A (fuse in connector).
- Reverse Polarity Protection: Ensures safe operation.
- Field Effect Transistors: No voltage drop, maximum efficiency.
- Low-Frequency Modulation: Prevents interference with CCD cameras.
- Durable Connectors: Unlike many other manufacturers, our dew heater connectors are mounted on the housing, which significantly increases their lifespan. Connectors mounted on circuit boards can loosen quickly and require careful handling.
- Power Adjustment Range: From 5% to 100% (5% power effectively disables heating).
- Extremely Easy to Use: Simplifies your observing experience.

Usage

1) Connecting heaters

The controller has 4 outputs and 2 control channels. Each channel regulates the power of its two corresponding outputs.

See the diagram:

- Channel I controls Outputs I.
- Channel II controls Outputs II.



Connect heaters to the appropriate outputs. It makes sense to distribute heaters across channels depending on their power requirements.

For example, a Newtonian secondary mirror heater or an SCT corrector requires different power than eyepiece heaters. In this case:

- Channel I → Telescope heater (mirror or corrector).
- Channel II → Eyepiece heaters.

Examples of typical setups:

Eyepieces only

- Channel I: Dew Heater Strip for 2" eyepieces and/or Extra dew strip.
- Channel II: Dew Heater Strips for 1.25" eyepieces.

Small astrograph

- Channel I: Dew Heater Strip for 3" telescopes.
- Channel II: Dew Heater Strip for 2" scopes—suitable for small guide scopes.
- This way, you can manage heating for the main telescope and the guide scope separately.

Typical Dobsonian

- Channel I: Newtonian Secondary Mirror Heater + Finder heater.
- Channel II: Eyepiece dew heaters.

Hopefully, the basic principle of connecting heaters is clear.

2) Power connection

After connecting the heaters, plug the controller into the power source using the cigarette lighter connector.

When correctly connected, the red LED on the plug will light up.

If the LED does not light up:

- The 12V DC power source is not functioning or not switched on.
- The polarity is reversed.
- The fuse inside the cigarette plug has blown.

Replacing the fuse:

Unscrew the tip of the cigarette plug to access the fuse. If the thin wire inside is broken, the fuse is blown and must be replaced.

Important: understand why the fuse blew—usually due to a short circuit. A faulty heater may cause the new fuse to blow again.

Warning: The cigarette plug uses a **6x30 mm fuse** rated at **5A maximum**. **Never use a fuse with a different rating!**

3) Adjusting heating power

Set the desired heating level with the control knob. **On most nights, a setting of 40–70% is sufficient.**

Important: Telescope optics (mirrors and correctors) are sensitive to excess heat. Too much thermal flow can degrade image quality. Do not apply more heat than necessary. Eyepieces and finders can be heated more generously.

Tips

What if my power source doesn't have a cigarette lighter socket?

Use one of our adapters: Adapter for Power Supply Adapter with Alligator Clips to Female Car Cigarette Lighter Socket

How do I mount the controller to my telescope?

The controller comes with silicone-based Velcro strips. These allow you to attach it to the telescope or mount and easily remove it when needed. The silicone adhesive layer ensures the Velcro can be removed without damaging the surface.

The set also includes a clip for securing the power cable to your telescope.