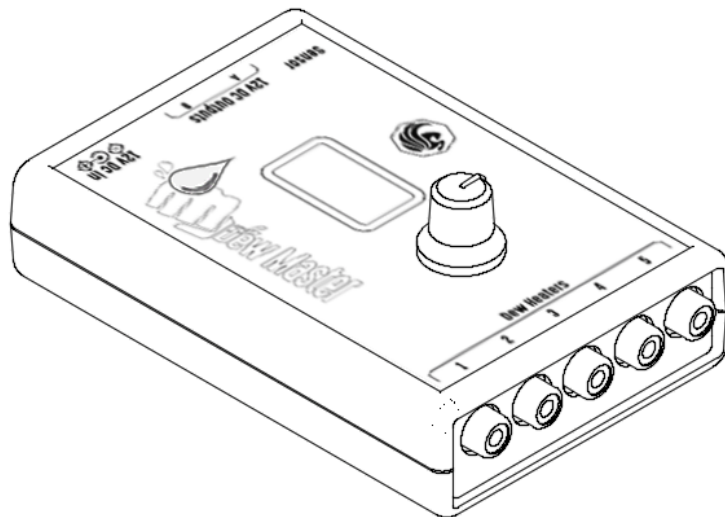# DewMaster

Operating Manual

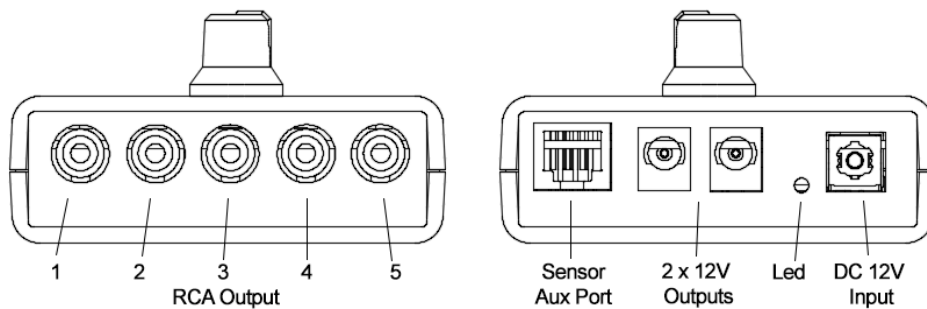Dear valued customer, thank you for choosing our products.

Pegasus Astro - DewMaster controller is a fully digital, simple to use and sophisticated device which can control the duty cycle of your Dew Heaters in a manual or automated way. Controller includes five (5) independent channels and has five (5) RCA outputs.

Connect your dew heaters and control them individually using PWM duty cycle %. Measure consumed Amperes and Input voltage by a glimpse of an eye. Optionally, an external temperature and humidity sensor lets you know the levels of the relative humidity, ambient temperature and dew point. Automatic dew heaters control will let you relax as you know that in case of high levels of humidity your optics will be moisture free!

Controller Design Overview

Top / 3D View

Side Views / Panels

Controller Care

- Controller is not waterproof and it should be kept clean and dry. Moisture can damage electronics and connectors.
- Do not allow solvents or chemicals to come into contact with the device
- Store controller indoor in a dry room when not in use
- Do not touch the internal components as they may get hot when in use

Power Supply

Unit has been designed with reverse polarity protection. If you accidentally reverse the DC power source polarity the unit will cut the power.

The controller is fitted with a standard **2.5mm** center positive DC power connection which powers on the controller. It can accept DC 11-14V. Please use a power supply that can provide DC 12V-13.8V / 6A (at least).

Insert the 2.5mm plug on the DC power cable. Controller will initialize, screen will display the Pegasus Astro Logo and the status LED will light in solid red color.

2 x Pass through outputs

Controller has two pass-through outputs. This means that the voltage in these two outputs is not regulated and it is the same as the input voltage. Each socket can accept up to 5Amps. The current that flows in these sockets is also measured from the global Ampmeter of the device.

Sensor Socket

The socket accepts an optional and temperature / humidity measurement device which is attached to the controller. It comes with length of 1m cable. Probe measures temperatures from -45°C to +125°C and 10% to 99% of relative humidity levels. Accuracy of the probe is: Relative Humidity ±2% (typical) and Temperature ±0.2°C (typical). Sensor is fully calibrated by factory. The controller detects the presence of the sensor / probe and requests temperature / humidity readings at 10 sec intervals.

⚠ **Please notice that you have to connect the sensor before you power on the controller. If you connect it later you will have to wait for 15 sec for probe recalibration.**

Status Led

A red colored LED is fitted on the side of the unit. The light displayed by the led indicated the status of the device.

Permanently Red Light	Controller is Operational
Fast Blinking Red Light	Input Voltage is out of normal levels *
Permanently Off	Controller not operational

* Led will blink when voltage is lower than 11V and Higher than 14V
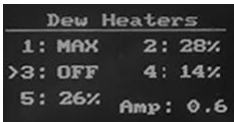
Rotary Encoder Knob

On the top of controller there is an infinite rotary knob. This digital encoder knob lets you do all operations. Encoder has a pushbutton for selection. Rotate the knob to modify a value and push the knob to select another item.

Operating Instructions:

- Plug the external environmental sensor to the RJ12 (sensor) socket (optional)
- Plug your dew strip in the dew outputs
- Plug any 12V device on the 12V outputs (optional)
- Plug DC 12V/ 6 - 15 Amps power cable into the DC 2.5mm socket.
- Pegasus Logo will appear on the display for 2 seconds. A beep will be heard, this means that firmware was loaded successfully and the device is now fully operational.
- Select Dew Output by pushing the knob. Turn the knob left or right to tune from 0 to 100% the output PWM duty cycle and provide "power juice" to your heater outputs.

Display Menus

Controller boots and after the "Pegasus Astro" logo it lands on the bellow screen

This is the actual screen that you can control all Dew Heater Outputs.
- Push the knob to select the desired output
- Rorate the Knob clock or anticlockwise to tune the power levels. Levels are 0 (OFF) to 100% (MAX).
- Push again the knob to move to another output
- When you reach 5th output the output selection will loop to 1st output.
- The "Amp" reading shows the total current in Amperes that device measures in real time.

After 15sec of user inactivity the screen will loop to the second menu (image below) which displays environmental readings taken from the external sensor (* If there is no sensor plugged, these readings will be shown with dashes).

You can easily read:
- Ambient Temperature
- Relative Humidity %
- Dew Point

Moreover, this menu shows the Input Voltage (Volts) which is an important reading if you use a battery and you would like to check the battery levels.

Switching Units

Device displays temperature in Celsius degrees at default. If you would like to switch to Fahrenheit degrees please follow bellow process:
- Unplug temperature sensor (* this is important to let device enter the 'switch units' function)
- Reboot device and wait to see the 'Dew Heater' Menu on screen
- Press knob for 10 seconds. A screen message will appear showing "Switching Units".
- New Units setting is stored now in EEPROM memory and you don't have to repeat this process.
- If you need to switch back to Celsius please follow same process.

Auto Dew Mode

Controller can consult temperature and humidity levels and automatically tune all five (5) channel heaters. In order to enter this function, you need to have connected the external environmental sensor.

- Make sure sensor is connected and there are readings for humidity and temperature.
- Keep pressed the knob for 2 seconds. (* if no sensor is presence it will not enter the function)
- You will hear a long beep sound and all outputs in display will have an asterisk '*' next to them. Moreover, the menu will be renamed from 'Dew Heaters' to "Auto Dew Heaters'
- Press the button once to exit 'Auto Dew' mode

Slave/ Auxiliary Mode

Device can enter in slave mode. In this mode the device is fully controller by an external device. This is for future usage. To enter in slave / auxiliary mode:

Unplug DC Input
- Keep pressed the knob
- Plug the power cable

Warranty

Controller is covered by one (1) year of warranty.

Technical Specifications

Supply Voltage	11V – 14V DC
Dew Heater Outputs	Mosfets can provide up to 5 Amps each (Five Outputs) (Can go up to 6 Amps but we don't recommend as it will overheat mosfets)
Pass-Through Outputs	Unregulated Voltage - 5 Amps Each (2 Outputs)
Total Input Current	Device supports up to 20Amps of input current
Operating Temperature	-40 ° C to +70 °C
External Env. Sensor	RJ12 Socket. Measures -45°C to +125°C & 10% to 99% of relative humidity levels. Accuracy of Humidity ±2% (typical) and Temperature ±0.2°C (typical)
Power Input Connector	2.5mm Centre Positive Socket
Dimensions	110mm x 75mm x 25 mm