

# Connecting a microMANTIS or a miniMANTIS

## DC POWER IN

Power for the MANTIS can be applied to the power jack on the lower left side via a standard 2.1mm x 5.5mm, center positive plug. The operating voltage range is 9vdc to 14vdc. While the MANTIS requires only approximately 50mA for operation, a power supply of at least 200mA is recommended in order to supply power to MANTIS controllers and/or to supply a basic 12vdc output to props. Power may also be supplied via the screw terminals labeled VDC+ and VDC-.

For situations where multiple controllers are connected to the same power supply via daisy chaining from the screw terminals or in situations where multiple intelligent sensors or prop air valves are to be powered, higher powered DC supplies are required. Up to 1 Amp of DC current for other devices may be passed through a MANTIS controller. The minimum power supply current rating shall be the sum of the current required by all connected devices plus 50mA for the controller.

## SENSOR CONNECTION

MANTIS brand Intelligent Sensors or triggers connect via the LADC (**L**ights **A**live **D**irect **C**onnect) modular plug on the upper left side. This connection supplies power as well as the trigger circuit.

Alternately, a third-party trigger may be connected via the screw terminals labeled (TRIG). A dry switch closure is required. If power is required for the trigger, it may be obtained from screw terminals labeled VDC+ and VDC-. It should be noted that the voltage available to triggers is determined by the power input source, which typically would be 12VDC.

## DEVICE CONNECTION

MANTIS controllers provide two sets of relay contacts with both normally open and normally closed circuits, thus allowing control of low voltage and high voltage circuits simultaneously. Each set of contacts is capable of handling up to 8 amps and up to 120 volts AC. Both sets of contacts may be connected parallel to increase power handling capacity to 16 amps or 1,920 watts at 120 volt. In some situations you may also control audio or speaker connections.

With the appropriate power source connected to the COMmon relay terminal, connect your device (light, motor, valve, etc) to the normally open (N/O) contact to activate the device when triggered. If the goal is to have a device normally active, then stop when triggered, connect to the normally closed (N/C) contact. Of course you can connect one device to N/O and another to N/C so one turns off and the other turns on when triggered.

The other set of contacts may now be used to control a low voltage device, such as a prop's air valve. Assuming that a 12vdc air valve is used, this can be accomplished in three different ways. If the prop comes with it's own 12 volt power supply, the AC current to the power supply may be switched or the 12 supply to the air valve may be switched. Either way, simply use the COMmon and the N/O relay contacts.

Alternately, you can eliminate the need for a power supply at your prop by having MANTIS furnish the 12vdc. Any MANTIS may be ordered with a factory modification that applies 12vdc to the COMmon connection of one or both sets of relay contacts. If this option is chosen, simply connect your air valve to the -VDC terminal and the N/O relay contact. Power will be supplied to the air valve when MANTIS is triggered. If this factory option has not been chosen, you can still have MANTIS furnish power to your prop by connecting a jumper between the +VDC and COMmon screw terminals.

***NOTE: Extreme care should be taken when working with 120 volt (also known as power line or mains) circuits. ALWAYS switch the hot wire (usually black). ALWAYS make sure that the hot wire is securely connected to the COMmon relay wire. NEVER switch neutral or ground wires. ALWAYS remember to mount the controller out of reach or insulate the screw connections with electrical tape. NEVER use the controller in wet locations. ALWAYS use GFCI (ground fault protection) with outdoor systems. ALWAYS follow National Electric Code and all local codes. If in doubt when working with 120 volt circuits, contact a licensed electrician.***

**LIGHTSALIVE**

8206 Rockville Road, #186

Indianapolis, IN 46214

317-244-2250

[www.lights-alive.com](http://www.lights-alive.com)

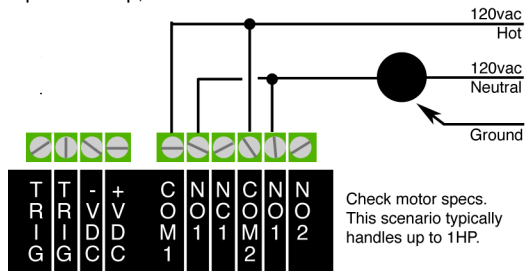
# DEVICE CONNECTION EXAMPLES

## miniMANTIS / microMANTIS

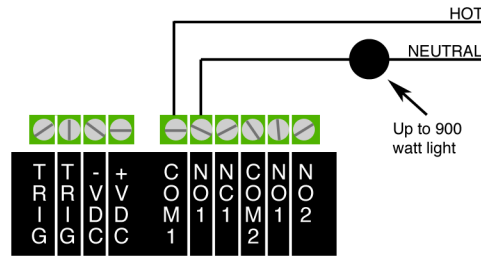
This document represents only a small fraction of the many uses for the microMANTIS and miniMANTIS controllers by Lights Alive. Please visit our website or call us for additional ideas.

### AC Motor Control

Up to 16 amp, 120 volt AC

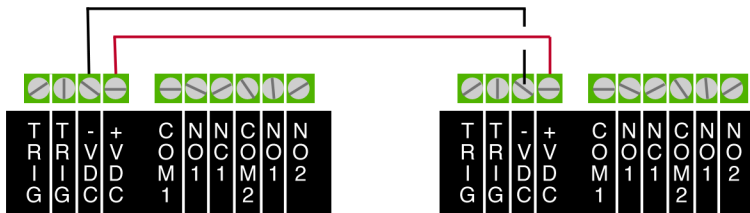


### Switching 120 volt AC Light



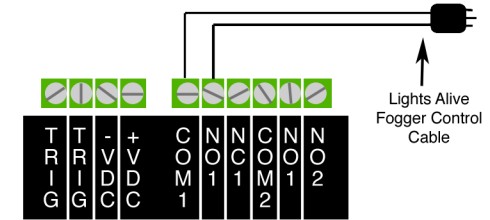
### Connecting Multiple Controllers to Single Power Supply

3rd party triggers, props and external relays can receive 12vdc up to 1 amp total.



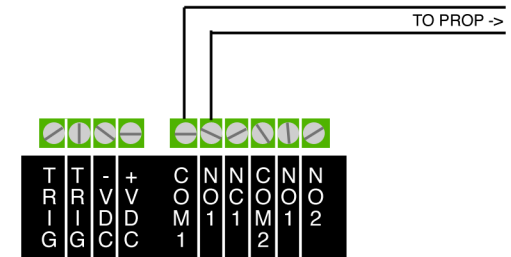
### Fogger Control

Compatible with all Lights Alive foggers as well as most other brands.



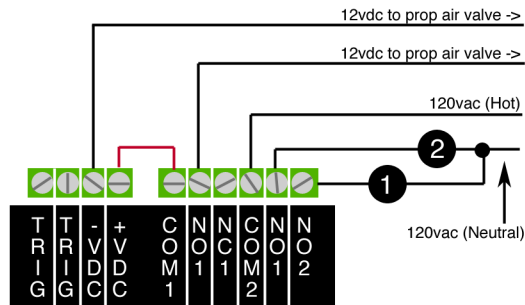
### Basic Prop Control

Assumes prop supplies power



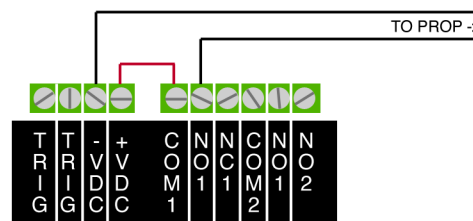
### Simultaneous High and Low Voltage Control

Controller supplies power to prop. Lights connected to mains.



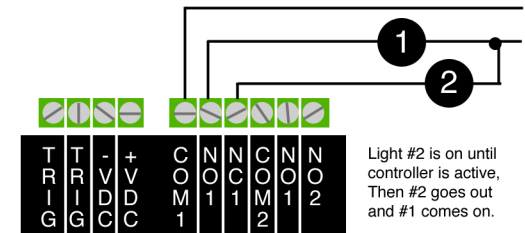
### Prop Control

Mantis supplies 12 volt DC power



### Alternating Lights

High or low voltage



Light #1 normally on, but goes out when controller triggered.  
Light #2 comes & prop activated simultaneously at trigger.