microMANTIS

Operation Manual
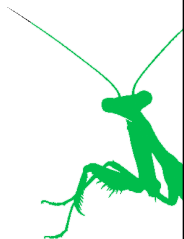
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UM101 "microMANTIS" Operation Notes

Description

The microMANTIS is a sophisticated, microprocessor-controlled digital event timer with an easy to use analog interface. It allows the user to set the amount of time before an event occurs (PRE DELAY), how long the event lasts (EVENT TIME), and how long to wait after the event (POST DELAY) before it can begin all over again.

Controls (4, left to right):

TEST, a pushbutton switch that begins the timed event. This is equivalent to operating the SENSOR or TRIGGER. TEST is also used to change modes.

PRE DELAY, a rotary control that sets how long before the timed event occurs. The range is 0 (fully counter-clockwise or CCW) to 10 (fully clockwise or CW) seconds.

EVENT TIME, a rotary control that sets how long the timed event lasts. The range

is 120 milliseconds (fully CCW), to 30 (fully CW) seconds. There is no "zero" value for this control.

POST DELAY, a rotary control that sets how long after the timed event the sequence can be repeated. The range is 0 (fully CCW) to 10 (fully CW) seconds.

Indicators (3, bottom to top):

LADC (green) shows that a Lights Alive SENSOR or device is connected to the RJ25 jack.

STATUS (green) is used several ways.

In normal operation ("idle", waiting for a SENSOR or to start it), it will be a "heartbeat", flashing about once a second.

If the microMANTIS is in the "optional" (repeating) mode, it will flash very fast, about 8 times a second, for about 2 seconds when power is first applied. Then it will begin normal operation (idle).

If PRE DELAY has been set to any position except 0 (fully CCW), it will flash

rapidly, about 4 times a second, for the time before the event occurs.

It will remain on for the entire time that the EVENT is on.

If the microMANTIS is in the "default" (non-repeating) mode, it will go off after the PRE DELAY and EVENT TIME are completed unless the or SENSOR is released (open).

If POST DELAY has been set to any position except 0 (fully CCW), it will flash more slowly, about 2 times a second (slower than for PRE DELAY but faster than for the normal idle), for the time after the event occurs.

TRIGGER (yellow) is on whenever a TRIGGER or SENSOR is active (closed).

NOTE: If TRIGGER is on and STATUS is off at the same time, this shows that the microMANTIS is in the default (non-repeating) mode and the sensor or TRIGGER is still on (closed).

Trigger/Sensor Connectors

Screw terminal connections for non-Lights Alive triggers.

DC Power

Screw terminal connections for 12 VDC power out for props or valves, or power in to the controller.

Test Switch

A pushbutton switch that begins the programmed event. This is equivalent to operating the sensor or TRIGGER. TEST is also used to change modes.

LADC Connector

The Lights Alive Direct Connect jack gives a positive, one-click connection with Lights Alive triggers and intelligent sensors.

DC Power In

A 2.1mm x 5.5mm center positive coaxial jack to receive 12VDC to power the controller, Mantis sensor, and externasl devices.

Outputs

Provides connections to external devices. Includes common, normally open, and normally closed contacts for each side of the relay. the MM-101 can be configured to supply power directly to solenoid or air valves, up to a maximum of 1 amp

LED Indicators

Trigger - Indicates an MANTIS or third-party sensor, or trigger is active (closed.)
Status - The rate of flash provides several indicators of controller functions.
LADC - Indicates proper connection with a MANTIS sensor or trigger

Pre-event Delay

Controls the length of time between the trigger event and the start of the event.

Event Time

Controls the duration of the desired event.

Post-event Delay

Controls the length of time after the event until the controller can be re-triggered.

Modes.

The microMANTIS has two modes of operation:

    1. Non-repeating, the default mode. When the device is TRIGGERed, it will go through its PRE DELAY and EVENT TIME. If the TRIGGER is not clear (still on or closed), it will stop. Once the TRIGGER is cleared (off or open), it will continue through its POST DELAY time.

    2. Repeating, the optional mode. When the device is TRIGGERed, it will go through its PRE DELAY, EVENT TIME, and POST DELAY. If the TRIGGER is not clear (still on or closed), it will start over again.

The microMANTIS is delivered to the customer in default mode, which is non-repeating.

    When power is first applied:

    If the STATUS light begins immediately to show a heartbeat, it is in default (non-repeating) mode.

If the STATUS light flashes very fast for about 2 seconds, it is in optional (repeating) mode.

The modes may be changed.

Changing modes is "toggled". If the microMANTIS is in default mode, this will change to the optional mode; if it is in optional mode, this will change it to the default mode.

1. Disconnect the power.

2. While holding the TEST pushbutton down, connect the power.

   For as long as the TEST pushbutton is held down, the STATUS light will be on.

3. Release the TEST pushbutton.

   If the STATUS light begins immediately to show a heartbeat, it has

changed to default (non-repeating) mode.

If the STATUS light flashes very fast for about 2 seconds, it has changed to optional (repeating) mode.

The microMANTIS will always "remember" what mode has been set, even when power is turned off.

Automatic repeat

The microMANTIS offers an "automatic" repeating mode. If the TRIGGER input is shorted closed ("strapped") when power is turned on, the device will detect this condition in 5 seconds and automatically begin to operate in the optional (repeating) mode even if it has been set to the default (non-repeating) mode.

If the microMANTIS was set to the default (non-repeating) mode and the strap is removed when the power is off, it will still be in the default (non-repeating) mode the next time power is turned on.

microMANTIS UM-101 Specifications

Control channels	1
Timer ranges	PRE DELAY 0-10 seconds
	EVENT TIME – up to 30 seconds
	POST DELAY 0-10 seconds
Relay contact life	20,000,000 operations
Relay ratings	8 amps per contact, 120 volt (16 amps total)
Power requirement	12vdc nominal (9-14vdc), 250mA typical (see note)
Size	4-1/2" (5-1/2" w/mounting ears) x 3-5/8" x 1-1/2"
Processor speed	1,000,000 instructions per second
Connections	LADC, screw terminals
Trigger method	Dry switch closure
Indicators	3 (TRIGGER, STATUS, LADC)
Controls	4 (TEST, PRE DELAY, EVENT TIME, POST DELAY)
Features	Repeat mode, optical isolation, prop test LADC, daisy chainable
Factory options	24 volt operation, prop power from relay contacts.

NOTE: Power requirement for the miniMANTIS is only 50mA. The additional power requirement is for Mantis Intelligent Sensors, air valves, other controllers, etc. Up to 1000mA may be passed through mini-MANTIS to power other controllers, sensors, solenoid valves, etc. Actual power supply should be equal to or greater than the sum of all connected devices plus 50mA for miniMANTIS.

MANTIS LIMITED FIVE (5) YEAR WARRANTY

Mantis controllers are conditionally warranted to the original purchaser against defective materials and/or workmanship for a period of five (5) years from the date of purchase. Lights Alive will provide free telephone and/or email technical support for the life of the product.

Lights Alive, at it's sole option, will repair or replace, without charge, any Mantis product found to contain defective materials and/or workmanship within the five year warranty period. The product must be returned, prepaid, to Lights Alive for service.

This warranty does not apply to normal wear and tear or physical damage caused by unreasonable use by the consumer. Consult your manual and/or the Lights Alive website for details on the proper usage and care of Mantis.

Great care is taken in the design and construction of Mantis and related components. However, by using this equipment, you understand and agree that you are doing so at your own risk. Lights Alive will not be liable for any personal injury, property damage or consequential damages of any kind due to the use, misuse, abuse or failure of the product, even if due to our negligence. No other warranty is expressed or implied.