



LCS-2 PhotoSwitch Trap Retrofit Instructions

Revision History

Date	Revision	Description	Author
3/12/2004	1	Initial draft from web document	Mark Bishop

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1.1 Summary of the LCS-2 PhotoSwitch

The LCS-2 PhotoSwitch (P/N 1.60) can turn a trap on at dusk and off at dawn. When used with the Air-Actuated Gate System, the LCS-2 conserves battery life and allows a single trip to the trap per day for consecutive days of collection. The LCS-2 PhotoSwitch can be supplied for either 6 or 12 volt operation. These instructions provide operational details on how to retrofit older traps with the LCS-2 photoswitch.

1.2 Instructions for Retro-fit and Operation

Installation of the LCS-2 PhotoSwitch on older traps is easy with the proper tools:

- electric drill with 3/32" and 5/16" bits
- router with a 1/4" diameter straight bit,
- soldering iron or gun, rosin-core solder and de-soldering wick. and
- wire strippers.

Begin by removing the motor-light fixture from the trap by cutting the power supply cord between the trap body and the motor and then removing the fixture, with its light bulb, motor, and fan from the trap. Then de-solder the wires attached to the light bulb socket and motor. It is important to mark on the motor the polarity of the wires when they are removed as the direction of rotation of DC motors is determined by the polarity of the supply; silver (tinned) and copper are negative and positive, respectively.

Once the motor-light fixture has been removed, use the black, PC-board holder to layout the location of the 2 screw holes and the slot to admit the gold connectors on the underside of the PC-board holder. The 2 holes and the slot are to be parallel to the axis of the trap; the upper hole should be approximately 1" below the top edge of the plastic body. The PC-board holder should be located midway between the vertical slots that hold the motor mount; you may find it easier to be more accurate by laying out the pilot holes after you have slotted the body and are able to insert the PC-board holder. Do the drilling with light pressure as the plastic is easy to fracture. The router is used to cut the slot (1" by 1/4"); use safety glasses and freehand the cut being careful not to make it too long. Use the 3/32"-drill to make the 2 self-tapping pilot holes. A 5/16" hole for the power cord will have to be drilled about 1" down from the top of the body and about 1" or so to the right of the location of the PC-board holder.

After making the holes and slot, begin installation by inserting (from the outside of the trap) the wires attached to the PC-board holder through the 1/4" by 1"-long slot. Insert the gold-plated terminals into the slot making sure that the shorter pair of wires are down. Secure the PC-board holder to the body of the trap with the small 4-40 machine screws supplied with the PhotoSwitch.

The next step is to connect the wires. First, in the longer, power supply cord, tie a single knot about 1" from the back of the card holder and then run this wire pair back outside the trap through the 5/16" hole; this will prevent the cord from being pulled out from the trap. The terminals supplied for attachment to the ends of the power supply cord will accommodate the 1/4" male spade quick-disconnect terminals found on some batteries and the miniature alligator clips that were supplied with your trap. Next, solder the shorter pair of wires onto the motor and light fixture; the tinned (silver) wires are negative on both the motor-light and power supply cords. Too much heat can melt the plastic around the terminals and ruin the motor. If you find that the motor blows upwards after installation, reverse the silver and copper wires on the motor terminals; you cannot simply hook the battery up backwards to rectify this problem as the photocell is protected against reversed polarity.

Insert the PhotoSwitch into the PC-board holder; the round photocell and the blue potentiometer on the card should be up. The foil side of the board should contact the row of 6 connectors in the PC-board holder that are soldered to the wires. The sensitivity of the switch can be adjusted via the small screw on the top of the potentiometer. Each time the trap is set up, test the battery and the polarity of the connection to the battery by covering the photocell with your finger. Reversed leads to the battery will not harm anything, but, the trap will not start either. The switching capacity of the circuit is 0.8 amperes.