User Instructions

Sensitivity Adjustment

The sensor has a potentiometer labeled R10 that adjusts the sensitivity of the sensor. To increase the sensitivity and give the sensor greater range turn the potentiometer clockwise.

The infrared sensor works best when there is a greater difference between outside temperature and the temperature of the body being sensed. On cold days the detection range will be as good as 150 feet. On hot day the detection range will be as good as 90 feet.

Sensing Delay

Switches 7 and 8 on the sensor control switch determine how much time will elapse before the sensor will start sensing again after a previous detection. The switch settings and the times corresponding to the switch setting are as follows.

<table>
<thead>
<tr>
<th>SW7</th>
<th>SW8</th>
<th>Delay Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>off</td>
<td>off</td>
<td>3.5 seconds</td>
</tr>
<tr>
<td>off</td>
<td>on</td>
<td>10 seconds</td>
</tr>
<tr>
<td>on</td>
<td>off</td>
<td>30 seconds</td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>90 seconds</td>
</tr>
</tbody>
</table>

Network Options

Simple Mode

To set all transmitters to communicate to all receivers set all addresses of transmitters and receivers to be identical. The easiest configuration for this is to turn switches 1, 2, 3, and 4 on the transmitters and receivers off. Also set switches 5 and 6 on the transmitters off. Set switch 5 on the receiver unit on. Use the output labeled 0 on the output bank of the receiver unit.

Advanced Mode

The switches labeled 1, 2, 3, and 4 set the address of the receiver being transmitted to and correspond to switches 1, 2, 3, and 4 on the receiver. Sixteen different addresses can be made
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and therefore there can be transmitters communicating with 16 different receivers. The address of the transmitter and the address of the receiver must be the same in order for transmission of data to take place. A transmitter will communicate to any receiver that is set with the same address. Switches 5 and 6 identify the TX# of the transmitter. The receiver has four different channels data can be taken from. This number identifies the channel the transmitter will communicate on. For example, if the transmitter is to communicate on channel one, its TX# is 00, which means switches 5 and 6 would be off. If it is to communicate on channel two its TX# is 01 which means switch 5 would be off and switch 6 would be on. If it is to communicate on channel three its TX# would be 10 which means switch 5 would be on the switch 6 would be off. If it is to communicate on channel four its TX# would be 11, which means switches 5 and 6 would be on. Channels one through four have separate outputs on the output bank on the receiver unit. These channels are labeled 1, 2, 3, and 4. Channel output 0 activates when any of the four channels receive data.

**Operation**

The sensor is most sensitive to motion across it in a horizontal direction when the antenna is facing upward or downward.

Be careful not to scratch or puncture the lens mounted on the housing through which the sensor looks. It is fragile and can break or scratch easily.

For cold weather operation use lithium ion batteries as these work better in cold conditions. For other operation conditions normal alkaline batteries work well.

If the unit is to be stored on the shelf for a long period of time unplug the battery in the receiver unit so as to preserve the batteries. This is not an issue with the batteries in the transmitter units.

**Receiver**

Switch 1, 2, 3, and 4 on the receiver unit correspond to the address of the transmitter the receiver will be receiving data from. The address of the receiver and the transmitter must be the same in order for communication to take place. Switch 5 on the receiver is a reset switch that turns the output off after a short time delay instead of the output being held in the on position. **For this application switch 5 needs to be turned on.**

**Timing Settings**

After an animal has been detected the cannon will continue to detonate for a user selected amount of time. The timing knob on the side of the receiver housing controls the duration of
Appendix B

operation after detection has taken place. The user can select between 5 to 30 minutes of operation.

_Propane Cannon Settings_

In order for this system to function the pressure regulator to the cannon must be set so that the cannon will detonate within two minutes of the valve being opened.

_Testing_

Without hooking up the propane cannon the system can be tested by viewing the LED lights inside the receiver unit. When an object is detected LED light 0 with flash.
# Appendix B

## Quick Reference User’s Guide

1. Turn potentiometer R10 clockwise to increase sensor sensitivity.
2. Set sensor delay with switches 7 and 8 on sensor unit.
3. Set transmitter address identical to its corresponding receiver’s address with switches 1, 2, 3, and 4 on the transmitter and receiver units.
4. Set the transmitter TX number (see Network Options in User Instructions) with switches 5 and 6 on the transmitter unit.
5. Adjust timing knob on side of housing unit for desired duration of operation after detection is made.
6. Adjust pressure regulators so that cannon will detonate within two minutes from the time the valve is opened.
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