Introduction
This application note describes how to use Heathcote Electronics’ IRDOT-1 IR detector instead of the Signal Animator’s (SA) optical detection that uses a photocell. You might choose this type of sensor in order to operate in dark conditions. This application note does not provide details on wiring your signal – these details are provided in the SA instructions! Refer to the IRDOT-1 documentation for mounting instructions.

Illustrated below is the circuitry to replace the photocell.
**Circuit Operation**

The nature of the SA’s photocell input is such that a covered photocell (i.e. very high resistance) is detected like an open circuit while an uncovered photocell (i.e. low resistance) is detected as close to 0 volts. The IRDOT-1’s output is the opposite “polarity” of what the SA requires. This is easily “fixed” with the inverter circuit consisting of a 10K ohm resistor (e.g. Radio Shack #271-1335) and an NPN transistor (e.g. Radio Shack #276-2058 or 276-2009). When the IRDOT-1’s detector output is inactive the NPN transistor will turn “on” and provide close to 0 volts on the photocell input. When the IRDOT-1’s detector output is active it will turn “off” the NPN transistor; the photocell input will essentially be an open circuit mimicking a covered photocell!

**Photocell sensitivity setup**

The SA’s photocell sensitivity adjustment potentiometer must be set to the “midway” point. This is easily accomplished by using the procedure detailed below.

1. Insert the blade of a flat-blade screwdriver (from the edge of the circuit board, not from the center of the board) into the adjustment pot. Turn the screwdriver completely **counter-clockwise** in the adjustment pot. Note the position/orientation of the screwdriver.
2. Rotate the potentiometer fully **clockwise** and note the position/orientation of the screwdriver.
3. Now rotate the potentiometer **counter-clockwise** until the screwdriver is approximately half-way between fully clockwise and fully counter-clockwise.

**Technical Support**

If you need further assistance with this application please do not hesitate to contact us by phone, fax, mail and email; our contact information can be found on the top of Page 1.