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Signal Animator

Application Note: Using the IRDOT-1 IR detector instead of a photocell

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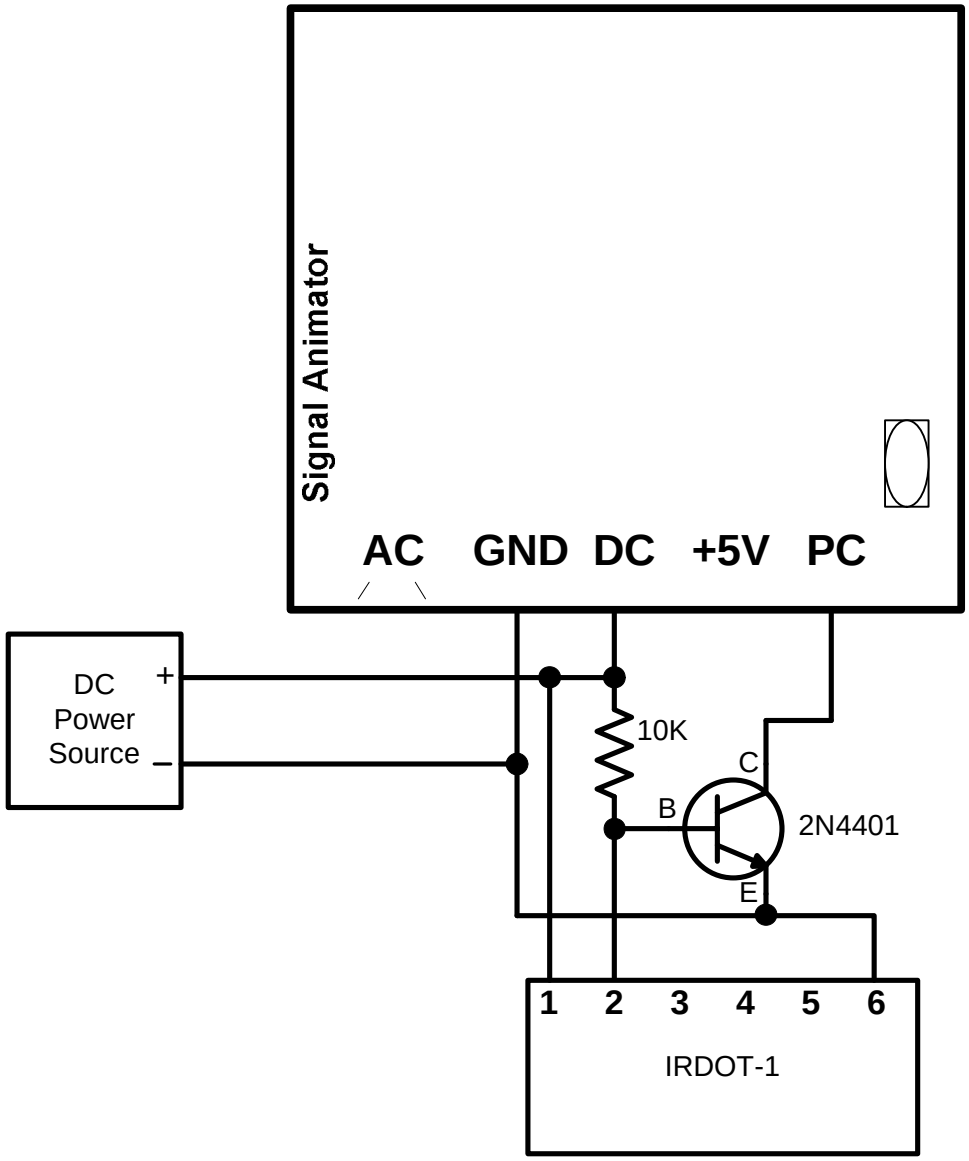
Introduction

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.