

King Fahd University of Petroleum and Minerals

University Diploma Program
Electronic Equipment Maintenance
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EET-027, Experiment # 10

Event Counting using Slotted Opto Switch

Objectives:

Design a circuit to count rotations of a disk/wheel using slotted opto switch.

Apparatus:

Slotted opto switch RS 306-061

Transistor, 2N3053

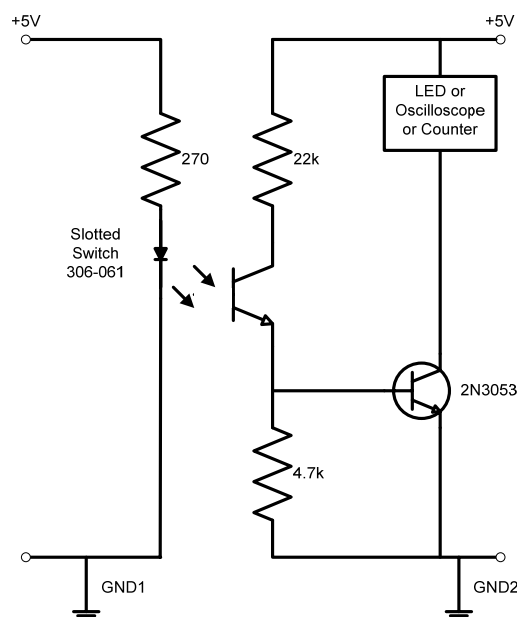
Resistors, 270 ohms, 22 k-ohms, 4.7 k-ohms.

Theory:

Slotted type Opto Switches are used when an object is located in the sensing position in the slot between the emitter and the receiver, it intercepts the optical beam of the emitter.

Procedure:

1. Connect the circuit as shown in the figure.



2. First connect the LED at the counting terminal of the circuit.
3. Set the wheel (attached with the DC motor) in between the slots of the opto switch.
4. Turn ON the power supply and turn ON the DC motor and observe that the LED will be blinking because of the wheel rotations, that shows the low and high pulse across the LED.
5. Connect the oscilloscope instead of the LED and observe the pulse in the oscilloscope.
6. Connect the counter instead of the LED and observe the counting of the wheel rotations.

Conclusions: