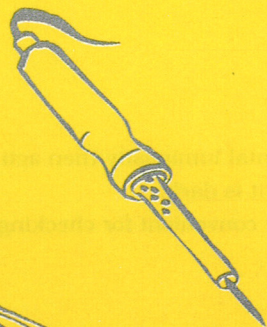


CIC[®]

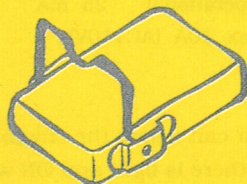
EDUCATION & HOBBY KITS

MODEL NO.:21-053

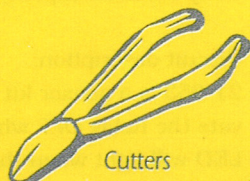
PHOTO SENSOR WITH CONTROL RELAY



General Purpose Iron



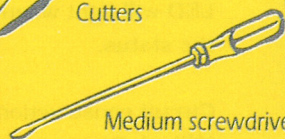
Mini Soldering Stand



Cutters



Long Nose Pliers



Medium screwdriver

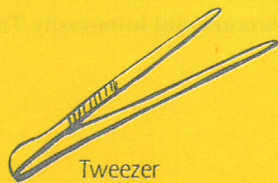
**The tools
you will need.....**



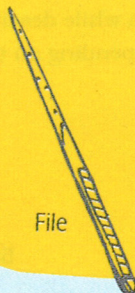
Solder



Phillip Head screwdriver



Tweezer



File



Meter

MODEL NO. : 21-053

Photo Sensor with Control Relay

GENERAL:

This sensor can switch the relay ON or OFF, based on the environmental luminosity.

FEATURES:

- . The sensitivity of the Cds sensor can be adjusted by the semi-resistor.
- . On- board relay can control Max. 300W appliances.
- . Attach with Red LED for Relay-activated ensuring.

1 TECHNICAL DATA:

Specification:

Power source :DC9V
Consumption Current :Standby 0.18mA
Operational 25 mA
Relay contactor capacity :Max. 10A (AC110V).

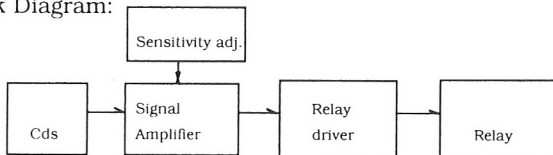
Circuit description:

21-053 is a sensor kit that can detect the environmental luminosity then activate the Relay OFF when there is light and ON when it is dark.

LED will light when the relay is turned ON, thus very convenient for checking the status.

Circuit construction is be as follows:

**Block Diagram:



Refer to the block diagram while describing the circuit function. Cds is a resistance-varying element, depending on the environmental luminosity. The greater

the luminosity the smaller the resistance, and vice-versa. The smaller the luminosity the greater the resistance.

Additional D1 is used as the protective diode for TR.

2. Connection examples:

* Use battery / Use 9V/006P battery as the power source.

3. Assembly check and adjustment:

. Perform check and adjustments in a room with normal luminosity.

1). Apply the power source (DC9V).

2). At this moment the LED will be dark. Please confirm this status. If there is a little light on the LED please rotate the semi-resistor VR to the left to decrease the sensitivity.

3). Cover the sensor with your hand to simulate dark environment. At this step a "click" should be heard, and the relay should be turned on, along with the LED light.

4). Now, take your hand away from the sensor. Another "click" should be heard and the relay and LED should be off.

4. Application Example:

. Night light: automatically turn on the lights as the environmental luminosity turns dark, and automatically turn off the lights. Day breaks, saving you every and money.

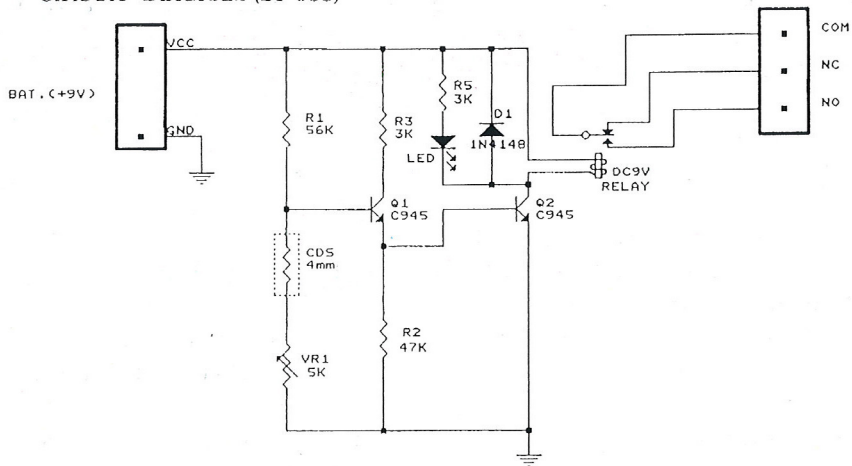
Notice:

Please don't shine light directly into the sensor. The sensor will not operate correctly.

Parts List:

1. Resistor	56K Ω	1/4W	$\pm 5\%$	M Type	R1
2. "	47K Ω	"	"	"	R2
3. "	3K Ω	"	"	"	R3, R5
4. Diode /	1N4148				X1
5. Transistor /	2SC945				X2
6. CDS	4 \emptyset				X1
7. LED	RED 3 \emptyset				X1
8. LED HOLDER	3 \emptyset X10mm				X2
9. PCB PIN					X5
10. BATTERY CLIP (9V)					X1 (LEAD WIRE 5~7CM)
11. PCB	50X79 mm				X1
12. Relay	DC9V				X1
13. VR5K	3PIN				X1

CIRCUIT DIAGRAM (21-053)



P. C. BOARD (TOP VIEW)

