DYSON

Solar Dynamics with Arduino

Components and Introduction

Microcontroller_Arduino; An open hardware development board that can be used by developers / an open-source microcontroller board based on the Microchip ATmega328P microcontroller, which is the main computational unit of the project. The digital and analog control signals along with power supply is overall managed and controlled by the brain.

Actuators_Servo_SG90; The mechanical system which actually makes certain physical maneuvers that help the system attain the max potential state i.e., directing the solar vector. This specific actuator SG90 in use, is capable of producing net torque of approx. 1.0kg/cm.

LDR_LightDependentResistor; The major component of the system that collects the data of the intensity of sunlight/UV rays. The component is made of superconducting substances as Cadmium Sulphide, of which the resistance (approx0-50ohm) varies with the intensity of light exposed.

Resistor_R10kohm; An essential component that maintain the closed loop circuit without any short-circuit. With no resistance to the system, it itself can entirely damage the brain, when exposed to UVr. It acts as the load when the LDR is at its idle resistance.

Solar_Cells; The driving unit for FC-28_&_LM293 converting the exposed UV/Solar Energy into optimum electrical energy, expecting approx. 5.0V.

FC-28_&_LM293; Soil hygrometer humidity detection module is used to detect moisture in the soil (presenting a botanical model). It is sensitive to ambient humidity. The output level of the module is high when the soil is dry, else the output is low.