FIRE FIGHTING BOT

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Flame Sensor

A flame sensor consists of a IR receiver, capacitor, resistor, position sensor and comparator LM393.It responds to wavelength of light between 760 nm -1100 nm. The flame probe converts light into current. It gives digital output. Detection angle of each sensor is 60 degrees

Working voltage-3.3 to 5.2 V

The comparator is used for signal conditioning.

SERVO MOTOR

It works on the principle of Pulse Width Modulation(PWM). It helps in the precise control of angular or linear position. It consist of DC motor, position sensor , gearing system and a control circuit. It has three wires – power(connected to 5V Arduino pin) ,ground, control wire. The control wire sends a signal that represents desired output position of the shaft. As a result, power is applied to its DC motor until its shaft turns to that position. Position sensor keeps on sending feedback till desired position is achieved. Angle of rotation is controlled by duration of pulse applied. There is a minimum pulse , maximum pulse and a repetition rate. Normally servos can rotate through about 180 degrees( 90 degree in each direction).

WATER PUMP MOTOR

This water pump works on 6V DC. We just need to immerse the pump in water ,connect a required pipe and power the motor to start pumping water. It can be controlled using a microcontroller( Arduino UNO) with the help of DC motor driver. We can program in

such a way so as to switch on and off the pump when required. It consists of two wires : red and black. Black is to be grounded and red is connected to one of the digital pins of Arduino.

L293D motor driver

It is a 16 pin IC which can be used to control set of two DC motors simultaneously. It is a dual H-bridge motor. H-bridge allows voltage to be flown in either direction . Voltage is needed to change its direction for being able to rotate the motor in clockwise or anticlockwise direction. Two H-bridge rotate two DC motors independently.

PROGRESS

Read about the components required for the project-working, data sheet, connections.

Started with the connections and testing.