ABSTRACT

This practical temperature controller controls temperature of any device according to its requirement for any industrial application. It also displays the temperature on an LCD display in the range of –55°C to +125°C. The heart of the circuit is an Arduino board which controls all its functions. An IC LM35 is used as temperature sensor. The LM-35 analog temperature device is interfaced to the analog pin of the Arduino board, through its built-in ADC, which converts these analog reading and displays that on the LCD, to indicate temperature of the device. User-defined temperature settings can be done using push buttons provided through Arduino board. Maximum and minimum settings are used for allowing any necessary hysteresis. Few push buttons are used to set the temperature by INC, for increase and DEC for decrease settings. As soon the max and min temperatures are set then the Arduino program generates PWM output on the corresponding digital output according to the measured temperature. This is fed to a DC Fan through a motor driver IC. The fan speed is proportional to the temperature measured. Standard power supply of 12 volt DC and 5 volt through a regulator are made from a step-down transformer along with a bridge rectifier and filter capacitor.