### POST LAB TASK

Design and implement an embedded system to control the intensity of 220V AC light using variable resistor interfaced with controller using TRIAC and Zero Crossing Detector Circuit.

**PROTEUS SIMULATIONS**

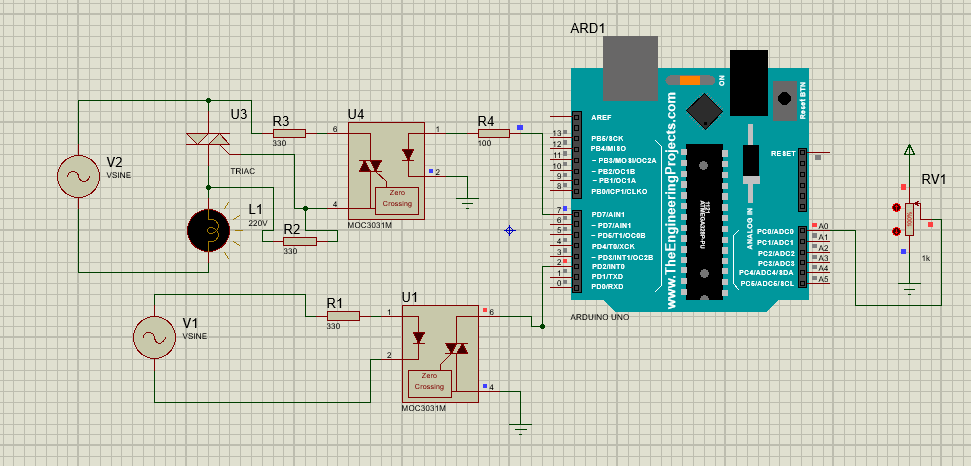


Figure : Minimum Brightness

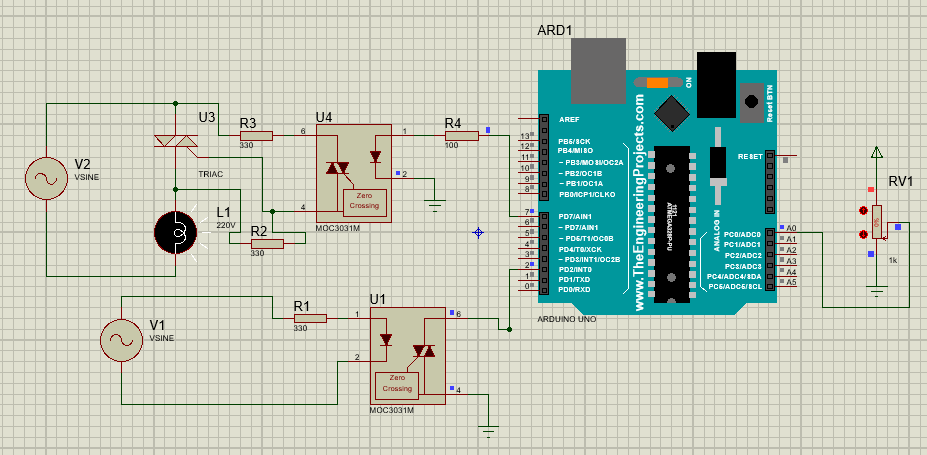


Figure : Maximum Brightness

**ARDUINO IDE CODE:**

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| int TRIAC = 7;  int speed\_val=0;  void setup()  {  pinMode(TRIAC, OUTPUT);  pinMode(A0,INPUT);  attachInterrupt(digitalPinToInterrupt(2), zero\_crossing, CHANGE);  }  void zero\_crossing()  {  int chop\_time = (200\*speed\_val);  delayMicroseconds(chop\_time);  digitalWrite(TRIAC, HIGH);  delayMicroseconds(10);  digitalWrite(TRIAC, LOW);  }  void loop()  {  int pot=analogRead(A0);  int data1 = map(pot, 0, 1023,10,40);  speed\_val=data1;  } |