// digital pin 2 is the hall pin

const int hall\_pin = 2;

// set number of hall trips for RPM reading (higher improves accuracy)

const float hall\_thresh =50.0;

void setup() {

 // initialize serial communication at 115200 bits per second:

 Serial.begin(115200);

 // make the hall pin an input:

 pinMode(hall\_pin, INPUT);

}

void loop() {

 // preallocate values for tach

 float hall\_count = 1.0;

 unsigned long start\_time = micros();

 bool on\_state = false;

 // counting number of times the hall sensor is tripped

 // but without double counting during the same trip

 while (true) {

 if (digitalRead(hall\_pin) == LOW) {

 if (!on\_state) {

 on\_state = true;

 hall\_count += 1.0;

 }

 } else {

 on\_state = false;

 }

 if (hall\_count >= hall\_thresh) {

 break;

 }

 }

 // print information about Time and RPM

 unsigned long end\_time = micros();

 float time\_passed = ((end\_time - start\_time) / 1000000.0);

 Serial.print("Time Passed: ");

 Serial.print(time\_passed);

 Serial.println("s");

 float rpm\_val = (hall\_count / time\_passed) \* 60.0;

 Serial.print(rpm\_val);

 Serial.println(" RPM");

 delay(1); // delay in between reads for stability

}