// 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

}