GoPiGo3 Sensors

Contents

Dexter Industry Temperature, Humidity, and Pressure Sensor

DI sensor documentation: https://di-sensors.readthedocs.io/en/master/

Barometric pressure compensation for altitude:
https://www.engineeringtoolbox.com/barometers-elevation-compensation-d_1812.html

1. Shutdown the GoPiGo3. Do not connect sensors when the GoPiGo3 has power
2. Plug the sensor into an I2C port. Mount the sensor on a sensor mount.

bme280_sensor.py

This program will read the Dexter Industries Temperature, Humidity Sensor (BME280) every 5 seconds and display to the console.

```
#!/usr/bin/env python3
# Name: thp_sensor.py
# Purpose: Read temperature, humidity and barometric pressure
# ------------------------------------------------
# History
# ------------------------------------------------
# Author    Date        Comments
# Loring    10/24/21    Changed to fahrenheit, convert pressure to inHg,
#                       compensate for altitude
# Barometric pressure compensation for altitude:
# https://www.engineeringtoolbox.com/barometers-elevation-compensation-d_1812.html
#
# DI sensor documentation: https://di-sensors.readthedocs.io/en/master/
#
# Python example program for the Dexter Industries
# BME280 Temperature Humidity Pressure Sensor

```

```
18 from time import sleep
19 from di_sensors.easy_temp_hum_press import EasyTHPSensor
20
21 print("Example program for reading Dexter Industries")
22 print("Temperature Humidity Pressure Sensor on an I2C port.")
23
24 my_thp = EasyTHPSensor()
25
26 while True:
27     # Read the temperature
28     # temp = my_thp.safe_celsius()
29     temp = my_thp.safe_fahrenheit()
30
31     # Read the relative humidity
32     hum = my_thp.safe_humidity()
33
34     # Read the pressure in pascals
35     press = my_thp.safe_pressure()
36
37     # Convert pascals to inHg, compensate for 4000' altitude
38     press = (press / 3386.38867) + 4.08
39
40     # Print the values to the console
41     print("Temperature: {:5.1f}F  Humidity: {:5.1f}%  Pressure: {:5.2f}".format(
42         temp, hum, press))
43
44     # Pause between readings
45     sleep(5)
```

What's Next?

Time to dig into more example files for more sensors. Upload the data to ThingSpeak.

Original program code from:

- GoPiGo3 file system: /Dexter/Software/Python/Examples/
- https://github.com/DexterInd/GoPiGo3 /Dexter/Software/Python/Examples/