

LamaPLC: AHT20 / BMP280 Modul

This compact module integrates an AHT20 sensor for air temperature and humidity with a BMP280 sensor for air pressure, offering a complete overview of environmental conditions. Both sensors are popular for their accuracy and small size. Communication is straightforward through the I²C interface, compatible with various microcontrollers, with an operating voltage range of 2-5V.



Technical Details

- Operating voltage: DC 2..5V
- Sensors: AHT20, BMP280
- Dimensions: 16 x 16.5 x 3 mm
- Weight: 4 g
- I²C Addresses
 - BMP280: 0x77
 - AHT20: 0x38
- Air pressure
 - Measurement range: 300 to 1100 hPa
 - Resolution: 0.18 Pa
 - Accuracy: ±1 Pa
- Humidity
 - Resolution: 0.024 %RH
 - Tolerance: ±2 %RH
 - Reproducibility: ±0.1 %RH
 - Response time: 8 seconds
 - Measurement range: 0-100 %RH
 - Long-term drift: □0.5 %RH/year
- Temperature
 - Resolution: 0.01°C
 - Tolerance: ±0.3°C
 - Reproducibility: ±0.1°C
 - Response time: minimum 5 seconds, maximum 30 seconds
 - Measurement range: -40°C to 85°C
 - Long-term drift: □0.04°C/year



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Arduino wiring

- SCL: A5
- GND: GND
- SDA: A4
- Vdd: 5V

Arduino code

For some reason, the Adafruit BMP280 library doesn't work reliably. It eventually freezes so severely that it only functions when the Arduino is powered off. I tried different parameter settings, but it didn't make a difference. It seems that the [BMx280MI](#) library written by Gregor Christandl works better.

```
// lamaPLC AHT20+BMP280 module test
// 2025.10.08. free code

#include <Arduino.h>
#include <Wire.h>
#include <Adafruit_AHTX0.h>
#include <BMx280I2C.h>

#define I2C_ADDRESS 0x77

Adafruit_AHTX0 aht;

BMx280I2C bmx280(I2C_ADDRESS);

void(* resetFunc) (void) = 0; //declare reset function @ address 0

void setup() {
  Serial.begin(9600);
  Wire.begin();
  Serial.println("AHT20+BMP280 module test");

  if (!aht.begin()) {
    Serial.println("Could not find a valid AHT20 sensor, check wiring!");
    while (1);
  }

  if (!bmx280.begin()) {
    Serial.println("Could not find a valid BMP280 sensor, check wiring!");
    while (1);
  }

  bmx280.resetToDefaults();

  //set an oversampling setting for pressure and temperature measurements.
  bmx280.writeOversamplingPressure(BMx280MI::OSRS_P_x16);
```

```
    bmx280.writeOversamplingTemperature(BMx280MI::0SRS_T_x16);

    Serial.println("AHT20 / BMP280 module ok");
}

void loop() {
    Serial.println("check -----");

    //start AHT20 measurement
    sensors_event_t humidity, temp;
    aht.getEvent(&humidity, &temp);
    Serial.print("AHT 20 Temperature: "); Serial.print(temp.temperature);
    Serial.println(" degrees C");
    Serial.print("AHT 20 Humidity: ");
    Serial.print(humidity.relative_humidity); Serial.println("% rH");

    //start BMP280 measurement
    if (!bmx280.measure())
    {
        Serial.println("could not start measurement, is a measurement
already running?");
        return;
    }

    //wait for the measurement to finish
    do
    {
        delay(100);
    } while (!bmx280.hasValue());

    Serial.print("BMP280 Pressure: "); Serial.print(bmx280.getPressure());
    Serial.println(" Pa");
    Serial.print("BMP280 Pressure (64 bit): ");
    Serial.print(bmx280.getPressure64()); Serial.println(" Pa");
    Serial.print("BMP280 Temperature: ");
    Serial.print(bmx280.getTemperature()); Serial.println(" degrees C");

    Serial.println();
    delay(5000);
}
```

code in github: <https://github.com/lamaPLC/AHT20-BMP280-Modul-Arduino-code>

Output on the serial monitor:

```
check -----
AHT 20 Temperature: 22.12 degrees C
AHT 20 Humidity: 62.55% rH
BMP280 Pressure: 99128.00 hPa
```

BMP280 Pressure (64 bit): 99125.84 hPa
 BMP280 Temperature: 23.17 degrees C

Example codes

[Arduino - OLED SH1106 with AHT20/BMP280 Sensor](#)

I²C topics on lamaPLC

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• LamaPLC: BMP/BME Bosch Temperature/Humidity/Pressure sensors with I²C communication	2026/04/23 21:52	bme280 , bme680 , bme688 , bmp180 , bmp280 , hw-611 , hw611 , bosch , temperature , humidity , pressure , sensor , arduino , i2c , communication , ai , cjmcu , volatile organic compounds , vocs , volatile sulfur compounds , vscs , iaq
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• lamaPLC: Energy, power, current, and voltage	2025/05/31 23:32	i2c, i c, communication, arduino, energy, power, current, sensor, ina226
• LamaPLC: ENS ScioSense Multi-gas sensors with I ² C communication	2026/04/23 21:52	ens160, sciosense, gas-quality, i2c, communication, sensor, arduino, code, eco ₂ , tvoc, aqi, indoor air quality, iaq, co ₂ , voc
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• lamaPLC: INA226 - current/voltage/power monitor with I²C communication	2026/04/23 21:52	i2c , i c , communication , arduino , energy , power , current , monitor , sensor , ina226 , ina219 , ina
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