

LamaPLC: DPS Infineon Temperature/Pressure sensors with I2C communication


The Infineon DPS310 is a precise digital sensor that measures air pressure and temperature, known for its accuracy, low power consumption, and suitability for applications such as indoor navigation and drone navigation. It is popular in hobbyist electronics projects using platforms such as Arduino and Raspberry Pi.



- **Integrated Temperature Compensation:** The sensor's capacitive sensing principle and internal signal processor, with individual calibration coefficients, ensure high precision under temperature variations.
- **Operating Modes:** It offers Command (manual), Background (automatic), and Standby operating modes for power management flexibility.
- **Built-in FIFO:** An internal FIFO (First-In, First-Out) can store up to 32 measurement results, reducing the host processor's polling rate.
- **Versatile Applications:** Common uses include indoor navigation (floor detection), health and sports (elevation tracking), outdoor navigation (GPS improvement), weather stations, and drone flight stability/height control.

Type of measurement	Model	Power voltage	Measurement, range, accuracy	Communication	Note
 Barometric Pressure Sensor	Infineon DPS310 	3.3V	Supply voltage: VDD _{IO} : 1.2 .. 3.6 V Operation range: Pressure: 300 .. 1200 hPa. Temperature: -40 - 85 °C Pressure sensor precision: ± 0.002 hPa (or ±0.02 m) (high precision mode) Relative accuracy: ± 0.06 hPa (or ±0.5 m) Absolute accuracy: ± 1 hPa (or ±8 m) Temperature accuracy: ± 0.5°C Pressure temperature sensitivity: 0.5Pa/K	I ² C or SPI I2C default address: 0x76 (SDO←GND) or 0x77 (SDO←VDD _{IO})	Measurement time: Typical: 27.6 ms

Moduls

Type of measurement	Name	Pics	Sensors	Description
<div style="display: flex; gap: 5px;"> <div style="background-color: #28a745; color: white; padding: 2px 5px; font-weight: bold;">T</div> <div style="background-color: #ffc107; color: white; padding: 2px 5px; font-weight: bold;">P</div> </div> <p>- Barometric Pressure Sensor</p>	Pressure Shield2Go		DPS310	<p>I²C or SPI I2C default address: 0x76 (SDO←GND) or 0x77 (SDO←VDD_{IO}) ✓ Arduino library</p>



If you'd like to support the development of the site with the price of a coffee — or a few — [please do so here](#).

Here's a handy tip: you can quickly save this page as a PDF by clicking "export to PDF" in the menu on the right side of the screen.

2026/02/14 23:38

Arduino & DPS310

The DPS310 is a high-precision barometric pressure and temperature sensor. To use it with Arduino, the **Adafruit DPS310 library** is the most common choice, as it provides a simplified "Unified Sensor" interface.

Wiring (I²C Mode)

Connecting via I²C is the easiest method.

- **VIN:** 3.3V or 5V (most breakout boards have a built-in regulator).
- **GND:** Ground.
- **SCL (Clock):** Arduino SCL (Pin A5 on Uno).
- **SDA (Data):** Arduino SDA (Pin A4 on Uno).
- **Address:** Default is **0x77**. Pull the SDO pin to GND to change it to 0x76.

Arduino Example Code

You must install the **Adafruit DPS310**, **Adafruit BusIO**, and **Adafruit Unified Sensor** libraries via the Arduino Library Manager.

```
#include <Adafruit_DPS310.h>

Adafruit_DPS310 dps;

void setup() {
  Serial.begin(115200);
  while (!Serial) delay(10);

  Serial.println("DPS310 Test");
}
```

```

if (!dps.begin_I2C()) { // Default address is 0x77
  Serial.println("Failed to find DPS310 sensor!");
  while (1) yield();
}
Serial.println("DPS310 Found!");

// Configure sensor for high precision
dps.configurePressure(DPS310_64HZ, DPS310_64SAMPLES);
dps.configureTemperature(DPS310_64HZ, DPS310_64SAMPLES);
}

void loop() {
  sensors_event_t temp_event, pressure_event;

  // Wait until data is ready
  if (dps.temperatureAvailable() && dps.pressureAvailable()) {
    dps.getEvents(&temp_event, &pressure_event);

    Serial.print("Temperature: ");
    Serial.print(temp_event.temperature);
    Serial.println(" °C");

    Serial.print("Pressure: ");
    Serial.print(pressure_event.pressure);
    Serial.println(" hPa");
    Serial.println();
  }
  delay(1000);
}

```

Alternative Libraries

If you are using the Infineon Shield2Go or Seeed Studio Grove versions, you might prefer their specific libraries:

- **Infineon XENSIV:** Search for *XENSIV Digital Pressure Sensor* in the library manager.
- **Seeed Studio:** Use the *Dps310* library which uses slightly different syntax, such as *Dps310PressureSensor.measurePressureOnce()*.

I²C topics on lamaPLC

Page	Date	Tags
• lamaPLC Communication: 1-Wire	2026/04/23 21:51	1-wire , communication , bus , microlan , i2c , uart , usart , ds18b20
• lamaPLC Communication: I²C	2025/09/23 21:25	i2c , i c , smbus , philips , bus , communication , arduino
• lamaPLC project: Sension SCD CO² measurement module	2026/04/15 19:34	scd30 , scd40 , scd41 , iaq , ndir , sensor , i2c , arduino code

- [LamaPLC: AHT10 Modul](#) 2026/03/22 03:14 [communication, i2c, temperature, humidity, sensor, aht, aht 10, modul](#)
- [LamaPLC: AHT20 / BMP280 Modul](#) 2026/04/23 21:52 [bmp280, aht20, adafruit, temperature, humidity, pressure, sensor, arduino, code, i2c](#)
- [LamaPLC: APDS - Avago ALS and proximity detection sensors with I²C communication](#) 2026/04/23 21:52 [avago, apds-9900, apds-9930, apds-9960, als, proximity, detection, gesture recognition, gesture, i2c, communication, sensor, arduino, code](#)
- [lamaPLC: Arduino Modul: BME680](#) 2026/05/12 18:40 [code, c, 2026, arduino, bme680, sensor, i2c, comunication](#)
- [lamaPLC: AS5600 Magnetic Induction Angle Measurement Sensor Module](#) 2026/05/13 00:06 [communication, i2c, as5600, as-5600, magnetic, induction, angle, sensor](#)
- [lamaPLC: Bi-Directional Logic Level Converter 3.3V ↔ 5V](#) 2026/04/12 00:34 [bi-directional, logic level converter, i2c, uart, spi](#)
- [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](#)
- [LamaPLC: CJMCU-219/INA-219 breakout board/IC with I²C communication](#) 2026/04/23 21:52 [cjmcu-219, ina-219, ina219, breakout board, i2c, communication, sensor, voltage, current, arduino, code, cjmcu](#)
- [LamaPLC: CJMCU-3216 / AP-3216 integrated digital ambient light and proximity sensor module/IC with I²C communication](#) 2026/04/23 21:52 [cjmcu-3216, cjmcu, ap-3216, ap3216, ambient light, proximity, sensor, arduino, code, i2c, communication](#)
- [lamaPLC: CJMCU-811 CCS811 Gas Sensor \(VOCs TVOC CO₂\)](#) 2026/04/23 21:52 [cjmcu-811, ccs811, gas, sensor, vocs, tvoc, eco2, co2, arduino, air quality metal oxide, mox, i2c, micropython, rp2040-eth](#)
- [LamaPLC: D6T Omron Non-Contact Thermal Sensors with I²C communication](#) 2026/04/23 21:52 [d6t, d6t-32l, d6t-44l, d6t-8l, d6t-1a, omron, non-contact, thermal, sensor, i2c, arduino, code](#)
- [LamaPLC: DPS Infineon Temperature/Pressure sensors with I²C communication](#) 2026/04/23 21:52 [dps310, infineon, temperature, pressure, sensor, arduino, i2c, communication, code](#)
- [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 I²C communication](#) 2026/04/23 21:52 [ens160, sciosense, gas-quality, i2c, communication, sensor, arduino, code, eco2, tvoc, aqi, indoor air quality, iaq, co₂, voc](#)

• lamaPLC: ESP32 / ESP8266	2025/11/22 00:07	esp8266 , esp32 , esp32-c2 , esp32-c3 , esp32-c5 , esp32-c6 , esp32-c61 , esp32-h2 , esp32-s2 , esp32-s3 , esp32-p4 , espressif systems , communication , ethernet , ip , wi-fi , thread , zigbee , matter , homekit , bluetooth , mqtt , adc , spi , uart , i2c , i2s , rmt , pwm , usb , usb otg , twai
• LamaPLC: Gas sensors	2023/07/01 17:29	gas , sensor , i2c , onewire , communication , mq-3 , mq-4 , mq-5 , mq-6 , mq-7 , mq-8 , mq-9 , mq-135 , gm-102b , gm-302b , gm-502b , gm-702b , alcohol , ch4 , natural gas , smoke , lng , co , co2 , lpg , h2 , iso-butane , nox , nh3 , benzene , town gas , formaldehyde , propane , humidity , temperature , voc , grv gas sens v2
• lamaPLC: GY-511 6DOF sensor module	2026/04/23 21:52	stmicroelectronics , lsm303dlhc , i2c , lsm303 , sensor , gy-511 , 6dof , pololu , module , arduino
• LamaPLC: GY-9250 MPU-9250/6500 9-axis Attitude Sensor Board	2026/04/23 21:52	ak8963 , gy-9250 , mpu-9250 , 9-axis , motion detection , magnetometer , communication , i c , i2c , spi
• LamaPLC: HDC Texas Instruments Temperature/humidity sensors with I²C communication	2026/04/23 21:52	sht21 , htu21 , si7021 , gy-21 , gy-213v , hdc1080 , gy-213v-hdc1080 , cjmcu , cjmcu-1080 , texas instruments , temperature , humidity , sensor , i2c , communication , arduino , code
• lamaPLC: HT16K33 display controller	2026/04/23 21:51	i2c , 7-segment display , display , ht16k33 , arduino
• LamaPLC: HTU TE Connectivity temperature/humidity sensors with I²C communication	2026/04/23 21:52	htu , htu31d , htu21d , htu20d , sht20 , htu20 , sht21 , htu21 , si7021 , gy-21 , gy-213v , hdc1080 , si702 , gy-20 , sht31 , htu31 , si7031 , gy-31 , te connectivity , temperature , humidity , i2c , communication , sensor , arduino , code
• lamaPLC: INA modules with Arduino libraries	2026/04/23 21:52	i2c , i c , communication , arduino , energy , power , current , monitor , sensor , ina219 , gy-219 , ina226 , gy-216 , ina228 , gy-228 , ina237 , ina238 , ina260 , ina3221 , ina
• 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
• lamaPLC: LCD 1602/2004 with I²C communication	2026/02/14 18:27	communication , i2c , display , lcd , 1602 , 2004 , hd44780 , pcf8574 , pcf8574t , pcf8574at , arduino
• LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module	2026/04/23 21:52	max30102 , max30100 , heart rate click , sensor , communication , i2c , arduino , code
• lamaPLC: MCP23017 / MCP23S17 16-Bit I/O Expander with Serial Interface I²C / SPI	2026/04/23 21:52	communication , i2c , mcp23017 , mcp23s17 , spi , i o expander , serial , cjmcu-2317 , cjmcu

• lamaPLC: MLX90614 (GY-906) infrared non-contact thermometer	2026/05/08 00:03	communication , i2c , temperature , mlx90614 , gy-906 , modul , infrared , non-contact thermometer , dsp , pwm , smbus , hailege
• lamaPLC: PCF857x I/O Expander chip/modul with I²C communication	2026/05/15 01:03	communication , i2c , pcf857x , pcf8574 , pcf8574a , pcf8575 , i o expander , i o extension , nxp , texas instruments
• LamaPLC: Pixart PAJ7620U2 Gesture recognition sensors/module with I²C communication	2026/04/23 21:52	paj7620u2 , gy-paj7620 , pixart , gesture recognition , i2c , communication , sensor , arduino , code
• lamaPLC: RP2040_ETH_Modul: I²C scanner	2026/05/12 16:20	code , micropython , 2026 , rp2040 eth , i2c , comunication
• lamaPLC: RP2040_ETH_Modul: MLX90614 simple	2026/05/12 17:06	code , micropython , 2026 , rp2040 eth , i2c , communication , mlx90614
• lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data	2026/05/12 21:06	code , micropython , 2026 , rp2040 eth , bme680 , i2c , sensor , communication
• lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data and store in Modbus input registers	2026/05/12 18:58	code , micropython , 2026 , rp2040 eth , bme680 , i2c , sensor , communication
• LamaPLC: SC16IS750 / SC16IS752: One or two serial (UART) ports from microcontroller via I²C or SPI communication	2026/04/23 21:52	cjmcu-750 , cjmcu-752 , cjmcu , nxp , sc16is750 , sc16is752 , uart , serial , i2c , spi , modul , converter , arduino , code
• LamaPLC: SGP Sensirion TVOC/VOC sensors with I²C communication	2026/04/15 19:41	sgp30 , sgp40 , sgp41 , sensirion , gas-sensor , i2c , communication , sensor , arduino , code , eco2 , voc , tvoc , indoor air quality , iaq , nox , hydrogen
• LamaPLC: SHT Sensirion Temperature/humidity sensor with I²C communication	2026/04/23 21:52	sht20 , sht21 , sht25 , sht30 , sht31 , sht35 , sht40 , gy21 , temperature , humidity , i2c , communication , sensor , arduino , code
• lamaPLC: Signal level converters	2026/02/14 23:47	pca9306 , i2c , voltage , level , converter
• lamaPLC: st756x display drivers	2026/05/20 16:17	display , driver , i2c , spi , lcd , cog , oled , st7565 , st7567 , gm12864 , gm12864-59n , gm12864-03a , gm12864-01a , gme12864-41
• lamaPLC: TCA9548A (HW617); Low-Voltage 8-Channel I²C Switch Module	2026/02/14 23:51	tca9548a , hw617 , i2c , switch , communication , expansion board , arduino
• lamaPLC: TM1637 7-segment display	2026/02/14 18:26	i2c , 7-segment display , display , tm1637 , arduino
• LamaPLC: TOFnnnC STMicroelectronics Time-of-Flight (ToF) sensors with I²C communication	2026/04/23 21:52	tof050c , vl6180 , tof200c , vl53l0x , tof400c , vl53l1x , stmicroelectronics , time-of-flight , tof , i2c , communication , sensor , arduino , code
• LamaPLC: VL53Lnn STMicroelectronics time-of-flight (ToF) laser-ranging sensors with I²C communication	2026/04/23 21:52	vl53l0x , vl53l1x , vl53l0 1xv2 , gy-530 , time-of-flight , tof , laser-ranging , i2c , communication , sensor , arduino , code
• LamaPLC: VL6180X STMicroelectronics Time-of-Flight (ToF) sensor with I²C communication	2026/04/23 21:52	vl6180x , stmicroelectronics , time-of-flight , tof , i2c , communication , sensor , arduino , code

- [lamaPLC: XGZP68xx: Silicon Pressure Sensors/Module](#) 2026/05/15 15:17
 communication, i2c, sensor, modul, pressure, cfsensor, xgzp68xx, xgzp6810d, xgzp6857d, xgzp6859d, xgzp6887d, xgzp6897d, xgzp6899a, piezoresistive, capacitive
- [Magnetic angle sensors](#) 2026/04/23 21:52
 magnetic angle sensor, magnetic flux, sensor, spi, i2c, pwm, communication, modul, as5047p, as5600, mt6701, mt6816, mt6835, tle5012b, amr, gmr, tmr, anisotropic magnetoresistive
- [SSH1106/SSD1306 OLED Display with I²C communication](#) 2026/02/14 18:27
 i2c, oled, display, ssd1306, sh1106, ssh1106, arduino, cmos

DPS310, Infineon, temperature, pressure, sensor, arduino, i2c, communication, code

This page has been accessed for: Today: 1, Until now: 191

From: <https://lamaplc.de/> - **lamaPLC**

Permanent link: <https://lamaplc.de/doku.php?id=sensor:dps>

Last update: **2026/04/21 20:47**

