Introduction

The DPS368 is a miniaturized digital barometric air pressure sensor with ultra-high precision (±2 cm) and a low current consumption, capable of measuring both pressure and temperature. Due to its robust package, it can withstand 50 m under water for one hour (IPx8). The pressure sensor element is based on a capacitive sensing principle which guarantees high precision during temperature changes. The small 2.0 x 2.5 x 1.1 mm package makes the DPS368 ideal for mobile applications and wearable devices. The internal signal processor converts the output from the pressure and temperature sensor elements to 24 bit results.

Each unit is individually calibrated, the calibration coefficients calculated during this process are stored in the calibration registers. The coefficients are used in the application to convert the measurement results to high accuracy pressure and temperature values.

The result FIFO can store up to 32 measurement results, allowing for a reduced host processor polling rate. Sensor measurements and calibration coefficients are available through the serial I²C or SPI interface.

Link to [Datasheet](#) and [Product Page](#)
Information

• Supply voltage is typ. 3.3 V, please refer to DPS368 datasheet for more details about maximum ratings
• Pin out on top (head) is directly connected to the pins of the DPS368
• If head is broken off, only two capacitors are connected to the DPS368
• Software compatible with Arduino and library fully integrated into the Arduino IDE
• Standard delivery of the board in terms of interface mode is I²C with 0x77 when the 0 Ohm resistors are soldered as shown on the right picture
• Sales Name S2GO PRESSURE DPS368 and OPN S2GOPRESSUREDPS368TOBO1

Ensure that no voltage applied to any of the pins exceeds the absolute maximum rating of 4 V
Evaluation Board PCB Details

The

DPS368 Pressure Shield2Go

Legend

- Information
- Labelling of Pins in Datasheet
- Pin Number in Datasheet
- Physical Pin Number
- Warning
- Additional Information
- NC Not Connected

Ground pins on board connected with each other.

The board can be switched from I²C mode to SPI mode by moving 0 Ohm resistors.

The maximum voltage on any pin is 4 V.

Solder Bridge J1 enables pull-down resistor on interrupt pin and changes I²C address from 0x77 to 0x76.

Solder Bridge J2 connects the interrupt pin to the INT/GPIO3 pin.

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- I²C with optional interrupt: 0 Ohm R11, R12, R13, R14 are soldered)
- SPI 4 Wire: 0 Ohm resistors R21, R22, R23, R24 are soldered
- J1 Jumper - If soldered, enables the pull-down resistor on the interrupt pin and changes the I²C address from 0x77 to 0x76)
- J2 Jumper - Can be soldered to connect the INT/GPIO3 pin
Arduino IDE

Arduino is a hardware-software prototyping environment IDE developed by arduino.cc:

• Installation Details for Windows: Click here
• Installation Details for Linux: Click here
• Installation Details for Mac OS: Click here
• Installation Details for Portable IDE: Click here

Arduino Quick Start

• What is Arduino? Click here
• Extended information about the Arduino environment. Click here
• How to import libraries? Click here
• How to install additional boards? Click here
• Problems related to Arduino? Click here for troubleshooting
How to download the library for Arduino - 1

Notes

• Open the Arduino IDE
• Navigate to *Sketch – Include Library – Manage Libraries*
• The Arduino library manager will be opened (see next slide for further instructions)
• Additional notes for installation can be found in the GitHub repository, e.g. if the library manager is not used

https://github.com/Infineon/DPS368-Library-Arduino
Notes

• The Arduino library manager is a comprehensive tool to install external libraries for Arduino
• Search for DPS368 in the Filter your search... field
• Select as Type: All and Topic: All when searching for DPS368
• As shown in the picture, please choose the respective library and install it
• Regularly check your installed libraries for updates
• In case of problems, please visit also our GitHub repository and open an issue to get further help

https://github.com/Infineon/DPS368-Library-Arduino
Example with XMC 2Go

Notes

- The Shield2Go form factor of the Shield2Go evaluation board is directly compatible with the XMC 2Go board
- Stack the DPS368 Pressure Shield2Go board on top of the XMC 2Go as shown in the picture
- The additional pin on the left-top side (designated with NC) is not connected to the XMC 2Go board
- Using the XMC-for-Arduino Arduino integration, the Arduino library for the DPS368 can be directly used

Steps

- Open one of the examples for the DPS368 from File – Examples and select as board XMC1100 XMC2Go
- Connect the stacked boards to the PC and press the Upload button
- Select the related COM port from Tools – Port and open the serial monitor with the set baud rate (see sketch/code with Serial.begin(<BAUDRATE>));

https://github.com/Infineon/XMC-for-Arduino
https://github.com/Infineon/DPS368-Library-Arduino
Important Warning

- The DPS368 has a maximum rating of 4 V
- Third party boards with 5 V logic, e.g. the Arduino Uno, cannot be connected to the DPS368 Pressure Shield2Go board directly, even if the power is connected to the 3.3 V pin as the interface lines, e.g. SDA/SCL, will still be driven by 5 V
- Please use appropriate level shifting for these boards
Part of your life. Part of tomorrow.