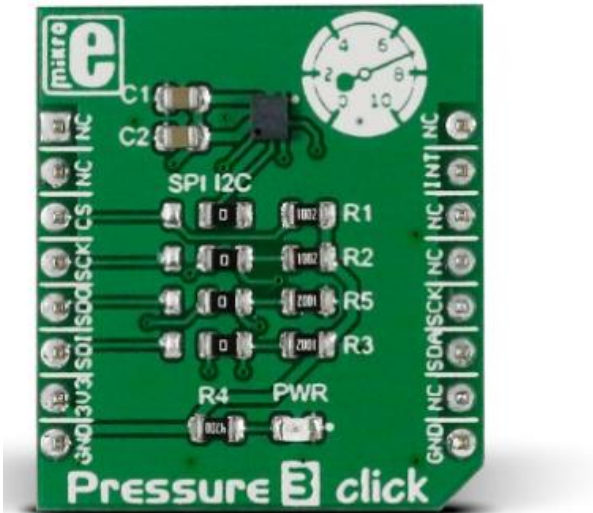


## Pressure 3 click



PID: MIKROE-2293

RS Product Code: [136-0819](#)

Pressure 3 click is a mikroBUS add-on board that carries an Infineon DPS310 digital barometric pressure sensor. It has an operating range from 300 to 1200 hPa with a relative accuracy of 0.06 hPa and absolute accuracy of 1 hPa.

DPS310 is a fast sensor with typical measurement time of 27.6ms for standard mode, down to 3.6ms in low precision mode.

The digital measurements are in 24-bit resolution. Up to 32 results can be stored in a FIFO buffer.

Pressure 3 click has both I2C and SPI outputs. The four interface configuration buttons are soldered to mikroBUS™ I2C pins by default. The click uses a 3.3V power supply.

## Specification

Product Type	Pressure / Altitude
Applications	Weather stations, elevation gain, GPS supplementation
On-board modules	Infineon DPS310 digital barometric pressure sensor
Key Features	Measurement range: 300-1200 hPa w/ relative accuracy of 0.06 hPa
Key Benefits	FIFO buffer, Fast operation (22.76ms)
Interface	I2C or SPI
Power Supply	3.3V
Compatibility	mikroBUS
Click board size	S (28.6 x 25.4 mm)
Weight	22g

Pressure 3 click carries an Infineon DPS310 digital barometric pressure sensor.

## Features and usage notes

Pressure 3 click has an operating range from 300 to 1200 hPa with a relative accuracy of 0.06 hPa and absolute accuracy of 1 hPa. DPS310 is a fast sensor with typical measurement time of 27.6ms for standard mode, down to 3.6ms in low precision mode.

DPS310 integrates a FIFO (First In First Out) buffer that can store the last 32 measurements. Using the buffer saves power because the target MCU doesn't have to constantly poll for resources.

The sensor is calibrated. Calibration coefficients are used to compensate the measurement results. The data sheet contains detailed instructions on how to convert compensated results to pressure and temperature values.

Pressure 3 click has both I2C and SPI outputs. The four interface configuration buttons are soldered to mikroBUS™ I2C pins by default. Additionally, there is an Interrupt pin that can be triggered whenever a new measurement is available or if a FIFO buffer is full.

# Programming

This snippet initializes all necessary pins and functions for using Pressure 3 Click, and performs a test by writing test values to the click, and then reading them back to the user through UART communication.

```
1 void main() {
2
3     Display_Init();
4     I2C1_Init_Advanced(400000, &_GPIO_MODULE_I2C1_PB67);
5     delay_ms(300);
6     Pressure_3_hal_init(0x76, MODE_I2C);
7
8     Set_Status(0x07);
9
10    while (1)
11    {
12        pressure3_calculate_coefficients();
13        calculate_temperature_pressure();
14
15        FloatToStr(Pressure, txt);
16        FloatToStr(Temperature, txt1);
17        TFT_Set_Font(TFT_defaultFont, CL_WHITE, FO_HORIZONTAL);
18        TFT_Write_Text("Pressure:", 30, 70);
19        TFT_Write_Text(txt, 100, 70);
20        TFT_Write_Text("Temperature:", 30, 100);
21        TFT_Write_Text(txt1, 120, 100);
22        Delay_ms(500);
23        TFT_Set_Font(TFT_defaultFont, CL_TEAL, FO_HORIZONTAL);
24
25        TFT_Write_Text("Pressure:", 30, 70);
26        TFT_Write_Text(txt, 100, 70);
27        TFT_Write_Text("Temperature:", 30, 100);
28        TFT_Write_Text(txt1, 120, 100);
29    }
30 }
```

Code examples that demonstrate the usage of Pressure 3 click with MikroElektronika hardware, written for mikroC for ARM, AVR, dsPIC, FT90x, PIC and PIC32 are available on Libstock.

## Downloads

[Pressure 3 click Examples](#)

[Pressure 3 click Schematic](#)