

ICP



# ICP-10111 Barometric Pressure Sensor

v1.0

2025-07-15

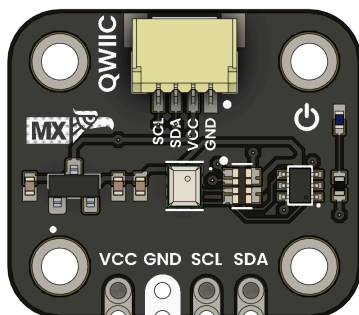
Rev. A

*Compact and efficient sensor designed for high-accuracy atmospheric pressure measurements*

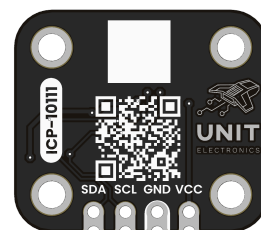
## PRODUCT OVERVIEW

The ICP-10111 Barometric Pressure Sensor Module is a compact and efficient sensor designed for high-accuracy atmospheric pressure measurements with low power consumption. Based on MEMS capacitive technology, this module offers ultra-low noise performance, exceptional relative accuracy, and stable sensor throughput. Ideal for weather monitoring, altitude measurement, and environmental sensing, it delivers industry-leading precision in demanding applications.

## PRODUCT VIEWS

**TOP VIEW**

*Component placement and connectors*

**BOTTOM VIEW**

*Underside components and connections*

# KEY TECHNICAL SPECIFICATIONS

## POWER SUPPLY

Supply **3.3 V–5.5 V (module), 1.8 V (sensor core)**  
Voltage:  
Supply Current:  
Low Power (10 Hz): **1.3  $\mu$ A**

## CONNECTIVITY

Interfaces: **up to 400 kHz, 7-bit address 0x63**  
Connector: **Qwiic + Pin Headers**

## PIN CONFIGURATION

PIN	VOLTAGE LEVEL	FUNCTION
VCC	3.3 V – 5.5 V	Provides power to the on-board regulator and sensor core.
GND	0 V	Common reference for power and signals.
SDA	1.8 V to VCC	Serial data line for I <sup>2</sup> C communications.
SCL	1.8 V to VCC	Serial clock line for I <sup>2</sup> C communications.

## TECHNICAL FEATURES

Board Dimensions 20.32 mm × 17.78 mm	Mounting Holes 4 × Ø 2.2 mm
High-stability MEMS capacitive pressure sensor with low drift	Integrated temperature sensor for on-board compensation
Ultra-low-noise $\Delta\Sigma$ ADC with 24-bit resolution	Three user-selectable power/noise modes for optimized current usage
Qwiic/STEMMA QT connector for solder-free I <sup>2</sup> C daisy-chaining	On-board level shifting and 1.8 V core regulator
Wide operating range –40 °C to +85 °C, 30 kPa to 110 kPa	

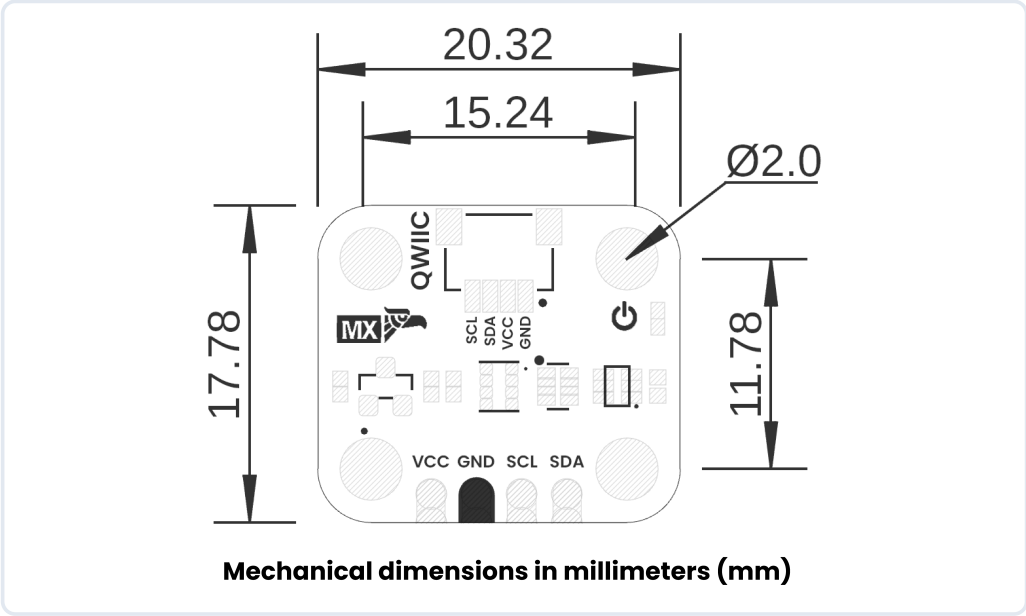
## TYPICAL APPLICATIONS

Weather Stations & Barographs	Altimeters & UAVs	Indoor/Outdoor Navigation
Wearables & IoT	Climatology & Research	Weather Forecasting

VISUAL DOCUMENTATION

PRIMARY TECHNICAL DOCUMENTATION

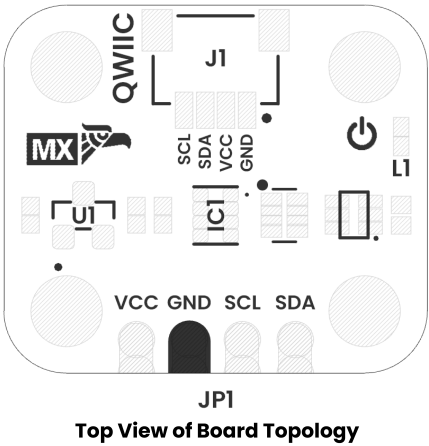
MECHANICAL DIMENSIONS



Physical dimensions and mounting specifications (measurements in millimeters)

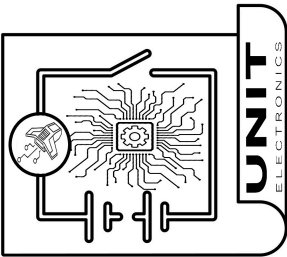
SUPPLEMENTARY TECHNICAL DOCUMENTATION

SYSTEM TOPOLOGY



Connection topology and system integration

CIRCUIT SCHEMATIC



Detailed circuit schematic diagram

## USAGE

- Arduino IDE
- Install SparkFun\_ICP10111 library via Library Manager
- Include and in your sketch
- PlatformIO
- Add sparkfun/sparkfun-icp10111@^1.0.0 to lib\_deps in platformio.ini
- Raspberry Pi (Linux/C or Python)
- Use the I<sup>2</sup>C-1 bus (/dev/i2c-1) with smbus2 (Python) or i2c-dev (C)
- CircuitPython / MicroPython
- Install adafruit\_icp10111 from the Adafruit bundle
- Use busio.I2C or I2C() to communicate over SDA/SCL

## DOWNLOADS

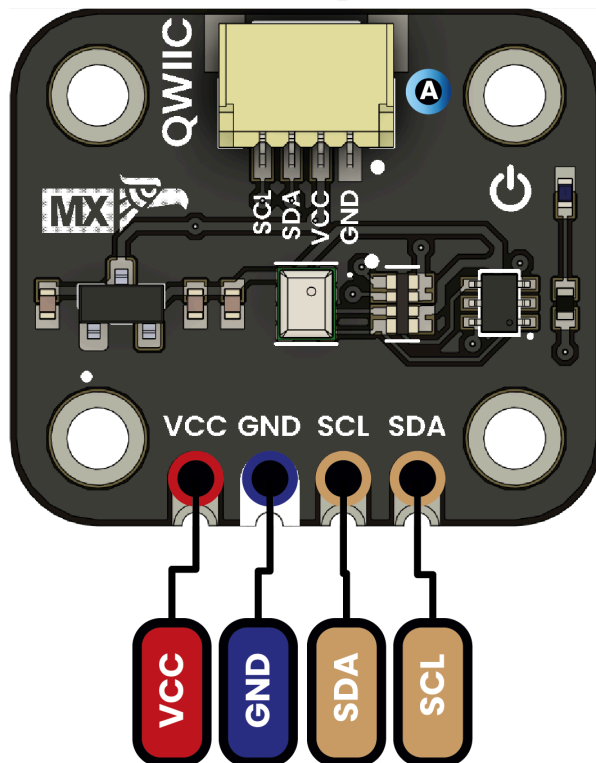
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# PIN CONFIGURATION & LAYOUT

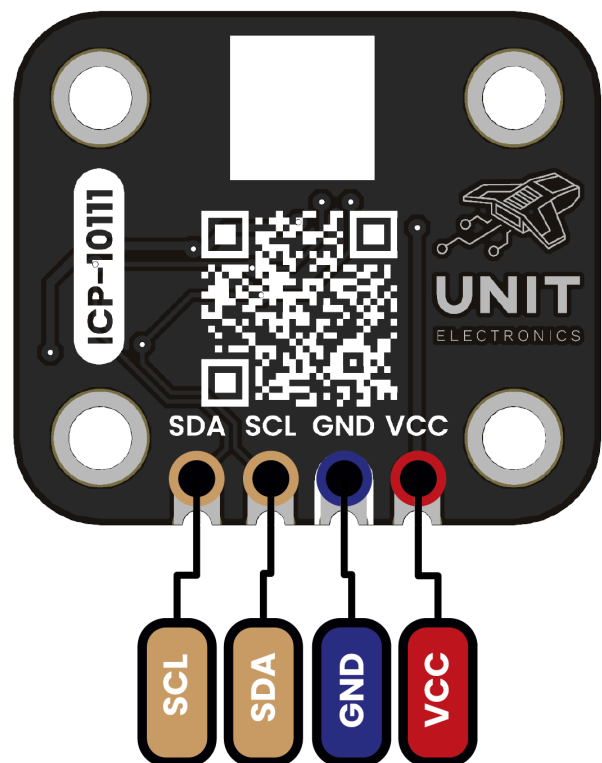
*Detailed pin assignment and connector layout*

## PINOUT

### Vista superior



### Vista inferior



## Descripción:

 Alimentación

 GND

 I2C



Complete pin configuration diagram showing all connectors, pin assignments, and electrical connections for proper integration

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Professional Technical Datasheet

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For commercial distribution