#### **BAROME**



# ICP-10111 Barometric Pressure Sensor Module

v1.0 2025-07-29 Rev. A

Professional electronic component

#### **PRODUCT OVERVIEW**

The UNIT 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

#### CONNECTIVITY

Interfaces: I<sup>2</sup>C, SPI

Connector: Qwiic + Pin Headers

#### **KEY FEATURES**

Wide operating range

-40 °C to +85 °C, 30 kPa to 110 kPa

#### **TECHNICAL SPECIFICATIONS**



FEATURE	SPECIFICATION
Pressure operating range	30 to 110 kPa
Noise and current consumption	ULN mode: 0.4 Pa @ 10.4 $\mu$ ALN mode: 0.8 Pa @ 5.2 $\mu$ ALP mode: 3.2 Pa @ 1.3 $\mu$ A
Pressure Sensor Relative Accuracy	±1 Pa for any 10 hPa change over 950 hPa–1050 hPa at 25°C
Pressure Sensor Absolute Accuracy	±1 hPa over 950 hPa–1050 hPa, 0°C to 65°C
Pressure Sensor Temperature Coefficient Offset	±0.5 Pa/°C over 25°C to 45°C at 100 kPa
Temperature Sensor Absolute Accuracy	±0.4°C
Temperature operating range	-40 °C to 85 °C
Host Interface	I2C at up to 400 kHz
Single Supply voltage	1.8V ±5%
RoHS and Green compliant	Yes

#### **INTERFACE OVERVIEW**

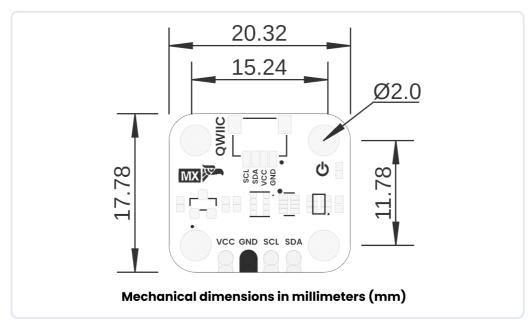
INTERFACE	SIGNALS / PINS	TYPICAL USE
I <sup>2</sup> C	SDA, SCL, VCC, GND (via Qwiic/STEMMA QT $^{\text{TM}}$ )	Main digital interface for pressure & temperature

#### **SUPPORTS**

SYMBOL	I/O TYPE	DESCRIPTION
VCC	Power Input	3.3 V–5.5 V supply for on-board regulator
GND	Ground	Common system ground
SDA	Bidirectional	I <sup>2</sup> C data line (7-bit address 0x63 default)
SCL	Bidirectional	I <sup>2</sup> C clock line

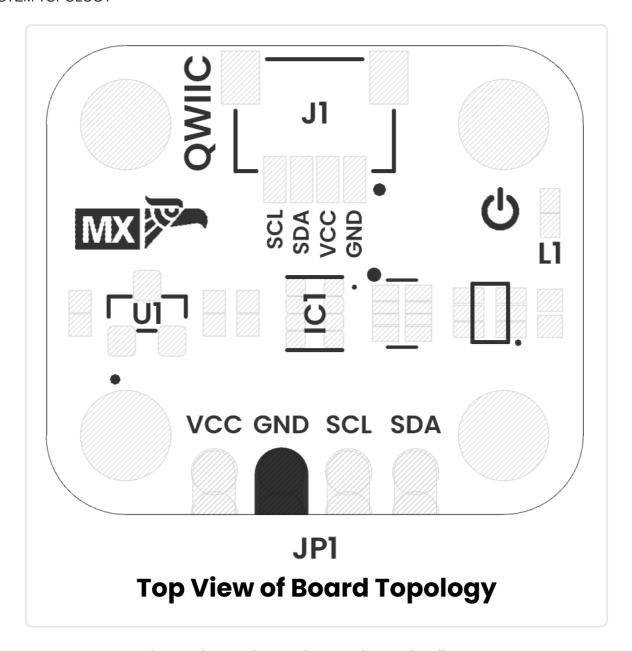
#### HARDWARE DOCUMENTATION

#### MECHANICAL DIMENSIONS



Physical dimensions and mounting specifications (measurements in millimeters)

#### SYSTEM TOPOLOGY



#### Connection topology and system integration diagram

Click image to open in full size

# REF. DESCRIPTION IC1 ICP-10111 Barometric Pressure Sensor L1 Power On LED U1 ME6206A18XG 1.8V Regulator JP1 2.54 mm Castellated Holes J1 QWIIC Connector (JST 1 mm pitch) for I2C

#### CIRCUIT SCHEMATIC



Complete circuit schematic showing all component connections

**View Complete Schematic PDF** 

## **PIN DESCRIPTION**

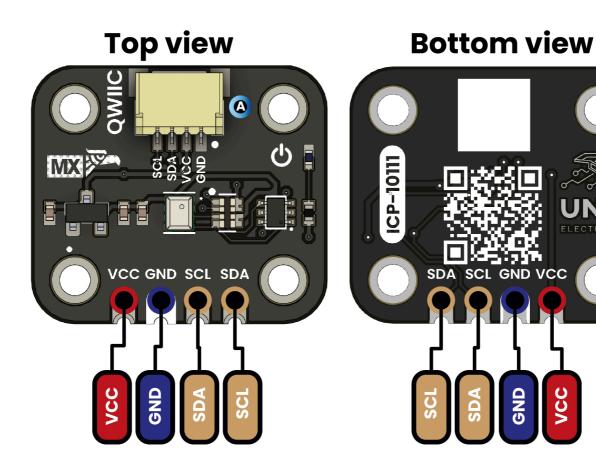
Detailed pin assignment and electrical specifications

SIGNAL DESCRIPTION		
FUNCTION	NOTES	
Power Supply	3.3V or 5V	
Ground	Common ground for all components	
VOLTAGE LEVEL	FUNCTION	
3.3 V – 5.5 V	Provides power to the on-board regulator and sensor core.	
0 V	Common reference for power and signals.	
1.8 V to VCC	Serial data line for I <sup>2</sup> C communications.	
1.8 V to VCC	Serial clock line for I <sup>2</sup> C communications.	

### PIN CONFIGURATION LAYOUT

Physical connector layout and pin positioning

## **PINOUT**



## **Description:**









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

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