BAROME

ICP-10111 Barometric Pressure Sensor Module

v1.0

2025-07-29
Rev. A

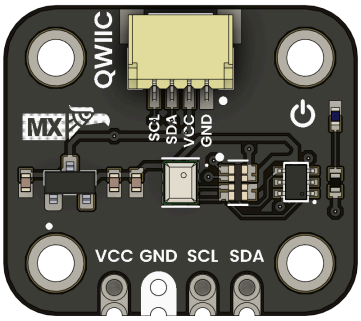
Professional electronic component

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.

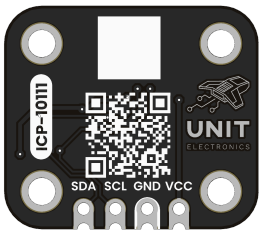
PRODUCT VIEWS

TOP VIEW



Component placement and connectors

BOTTOM VIEW



Underside components and connections

KEY TECHNICAL SPECIFICATIONS

CONNECTIVITY

Interfaces:	**I²C, SPI**
Connector:	**Qwiic + Pin Headers**

KEY FEATURES

Wide operating range
–40 °C to +85 °C, 30 kPa to 110 kPa

TECHNICAL SPECIFICATIONS

📦 OVERVIEW

FEATURE	SPECIFICATION
Pressure operating range	30 to 110 kPa
Noise and current consumption	ULN mode: 0.4 Pa @ 10.4 µALN mode: 0.8 Pa @ 5.2 µALP mode: 3.2 Pa @ 1.3 µA
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

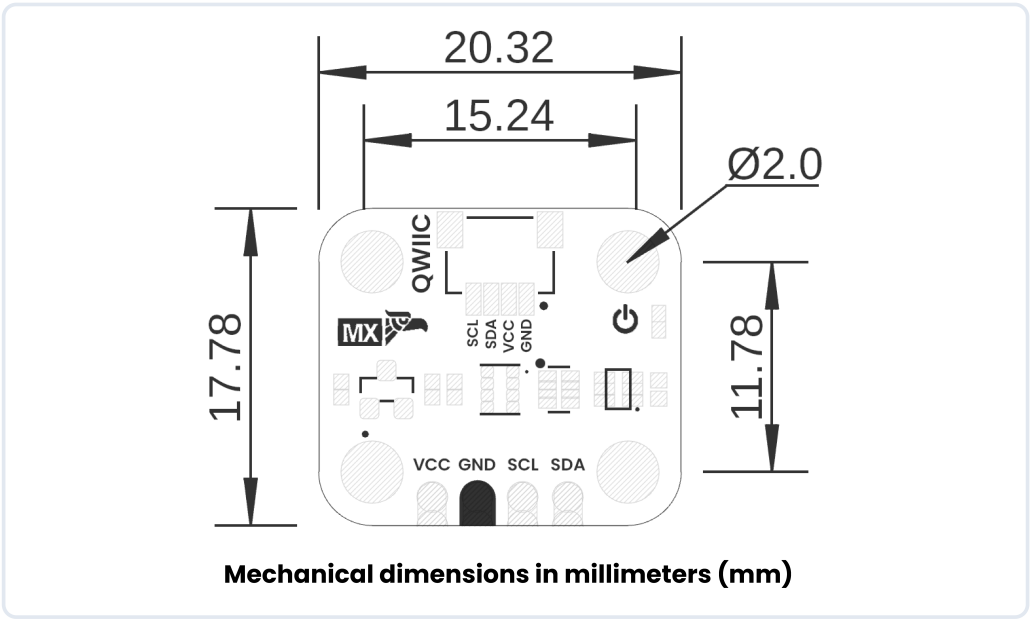
INTERFACE	SIGNALS / PINS	TYPICAL USE
I²C	SDA, SCL, VCC, GND (via Qwiic/STEMMA QT™)	Main digital interface for pressure & temperature

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	I²C data line (7-bit address 0x63 default)
SCL	Bidirectional	I²C clock line

HARDWARE DOCUMENTATION

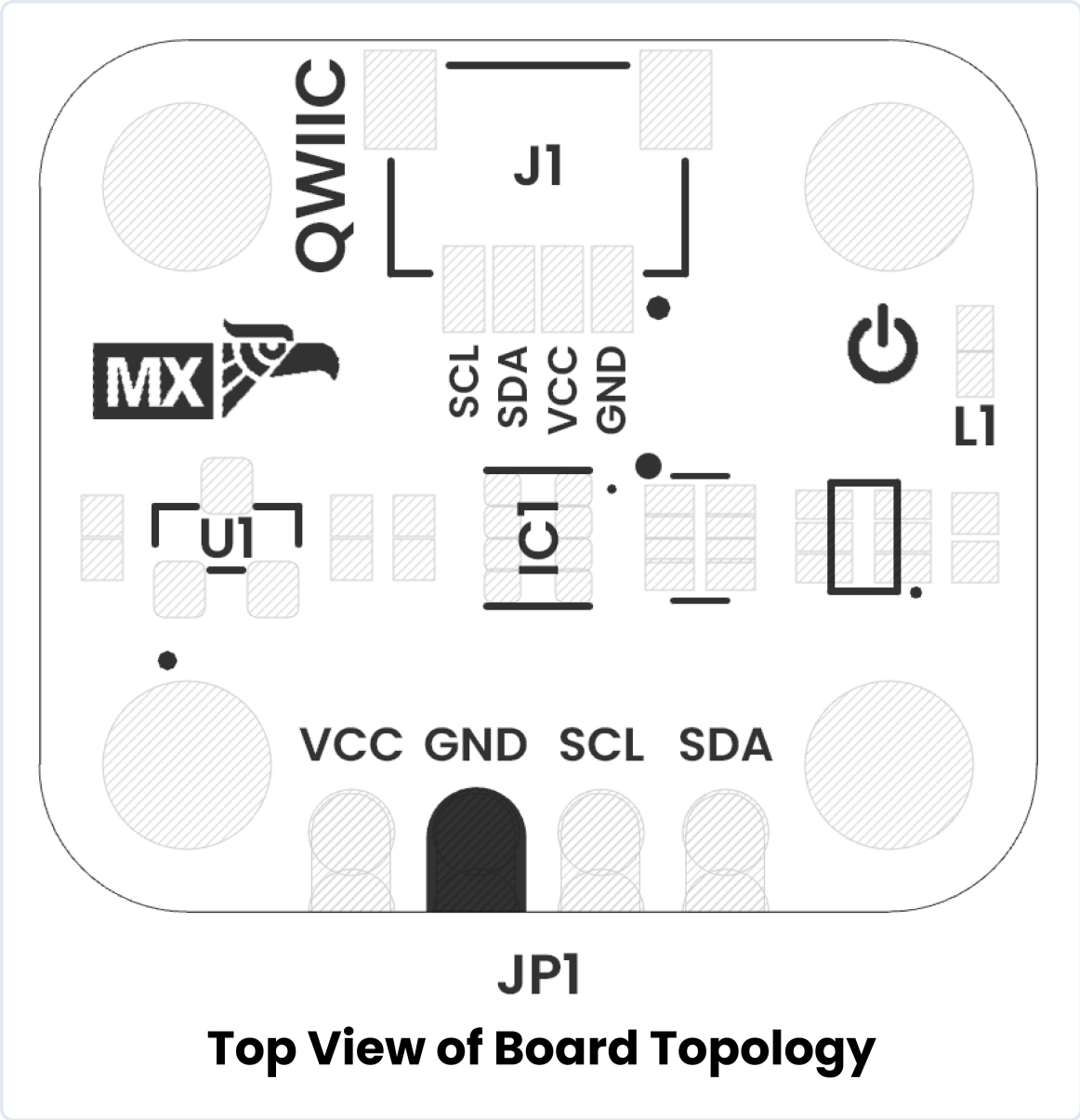
MECHANICAL DIMENSIONS



Mechanical dimensions in millimeters (mm)

Physical dimensions and mounting specifications (measurements in millimeters)

SYSTEM TOPOLOGY



Connection topology and system integration diagram

Click image to open in full size

COMPONENT REFERENCE

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

Circuit Schematic

Complete circuit schematic showing all component connections

View Complete Schematic PDF

PIN DESCRIPTION

Detailed pin assignment and electrical specifications

SIGNAL DESCRIPTION

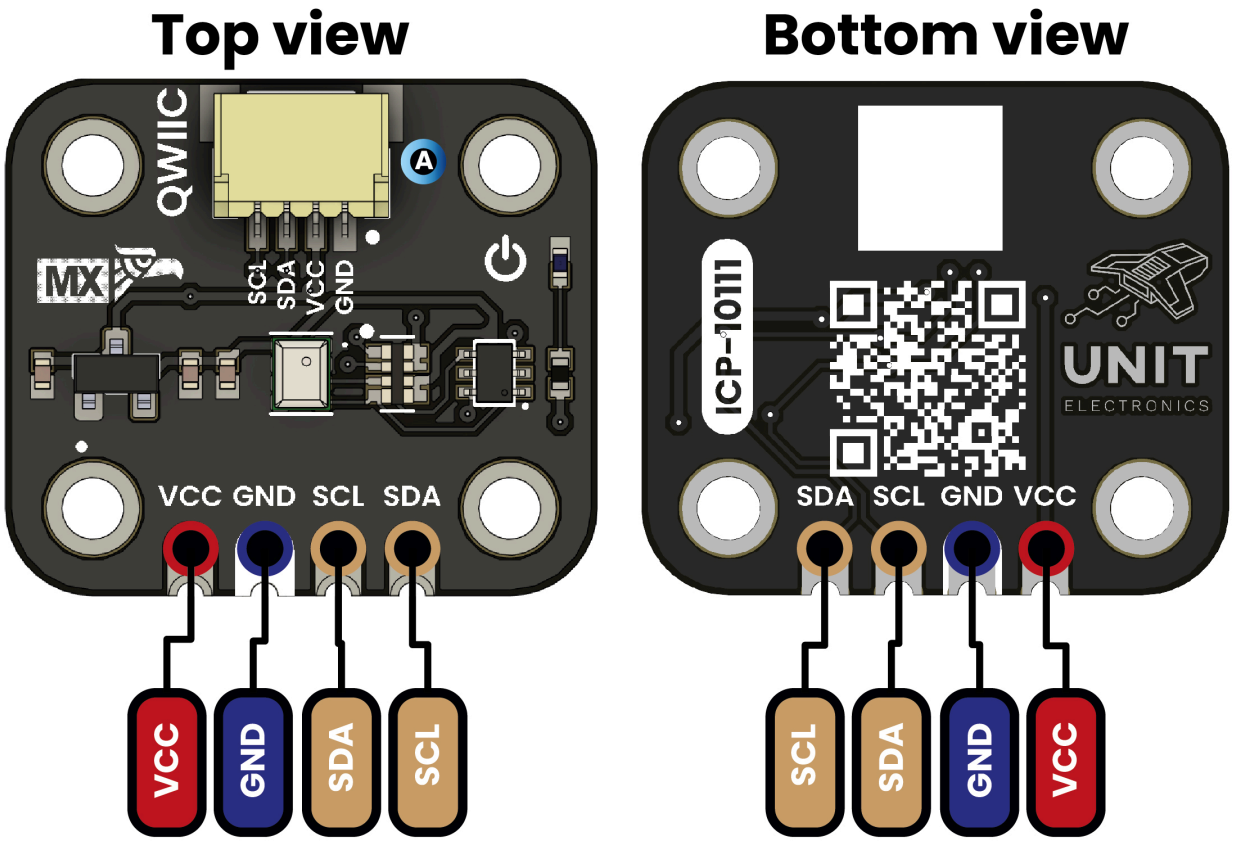
FUNCTION	NOTES
Power Supply	3.3V or 5V
Ground	Common ground for all components

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 I²C communications.
1.8 V to VCC	Serial clock line for I²C communications.

PIN CONFIGURATION LAYOUT

Physical connector layout and pin positioning

PINOUT



Description:

- Supply voltage
- GND
- I2C

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

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