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



| FEATURE | SPECIFICATION |
|---|---|
| Pressure operating range | 30 to 110 kPa |
| Noise and current consumption | ULN mode: 0.4 Pa @ 10.4 μ ALN mode: 0.8 Pa @ 5.2 μ ALP mode: 3.2 Pa @ 1.3 μ 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

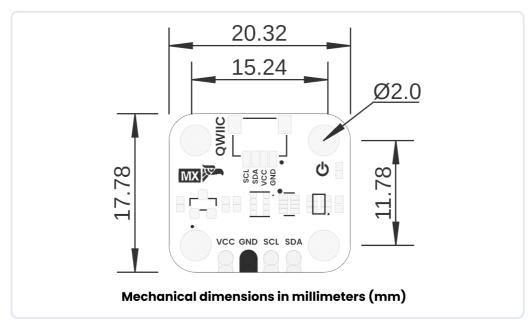
| INTERFACE | SIGNALS / PINS | TYPICAL USE |
|------------------|--|---|
| I ² C | SDA, SCL, VCC, GND (via Qwiic/STEMMA QT $^{\text{TM}}$) | Main digital interface for pressure & temperature |

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 ² C data line (7-bit address 0x63 default) |
| SCL | Bidirectional | I ² C clock line |

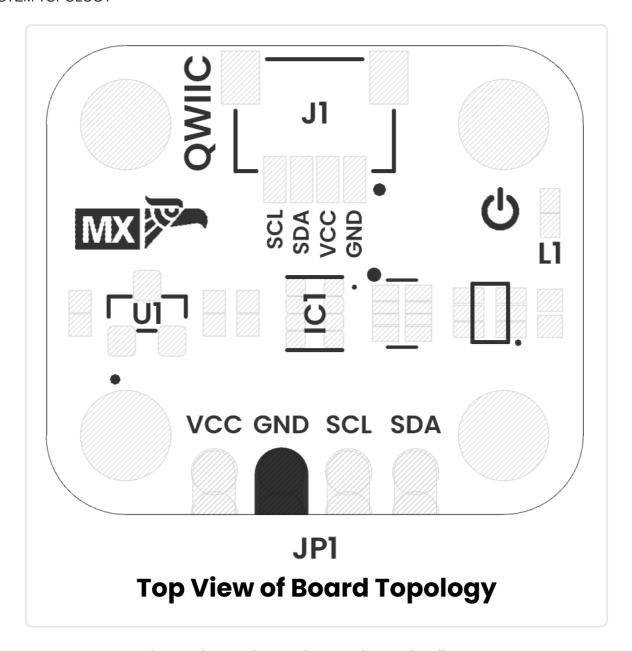
HARDWARE DOCUMENTATION

MECHANICAL DIMENSIONS



Physical dimensions and mounting specifications (measurements in millimeters)

SYSTEM TOPOLOGY

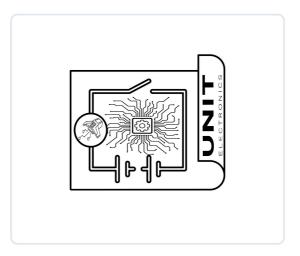


Connection topology and system integration diagram

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

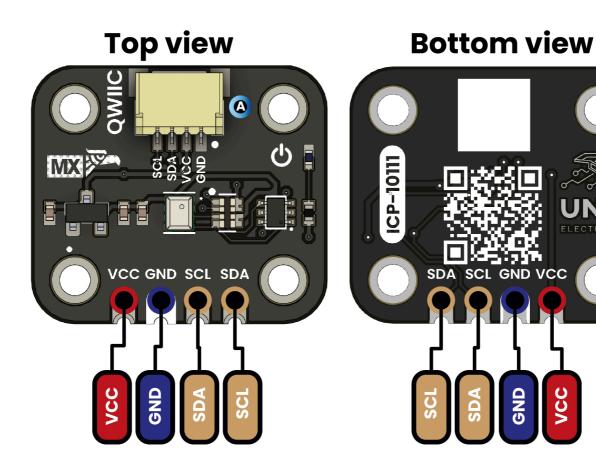
Detailed pin assignment and electrical specifications

| 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 ² C communications. | |
| 1.8 V to VCC | Serial clock line for I ² 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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