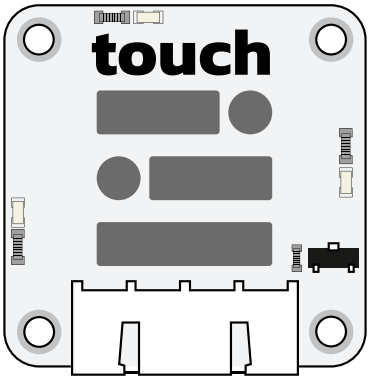
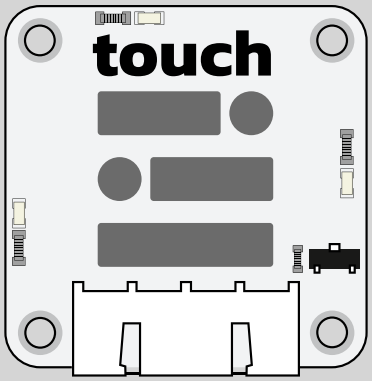



# amomii Touch

**DATASHEET**




## Description

The amomii Touch module is a simple but versatile tool for detecting contact. It is a resistive sensor that works by detecting when a circuit is closed by a conductive object, such as a finger or a metal ball. Its dual-function design, which allows for detection via two modes, makes it an ideal input device for a variety of projects.

## Key Features

- **Resistive Touch Sensing:** The module detects contact by sensing when a circuit is closed.
- **Dual-Mode Detection:** It is capable of detecting touch in two distinct ways, providing flexibility for different applications.
- **Controllable LEDs:** The module includes built-in LEDs that can be turned on or off via a dedicated signal pin.

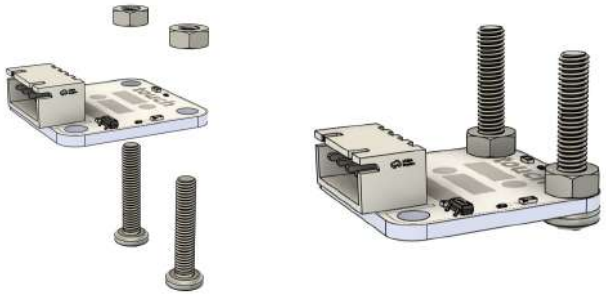
# Touch Modes

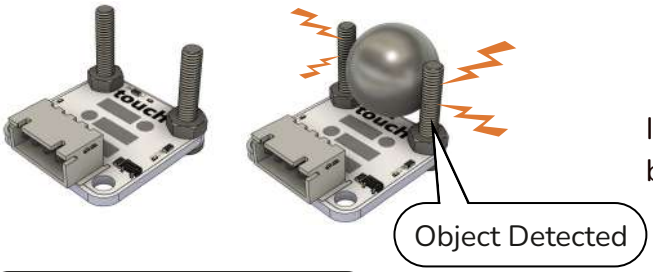
The Touch module has two primary modes for detecting contact:

## ● Bolt Touch Mode

This mode detects conductive objects that bridge the gap between the attached bolts.

To use the module in this mode, you must first connect two conductive M3 bolts.

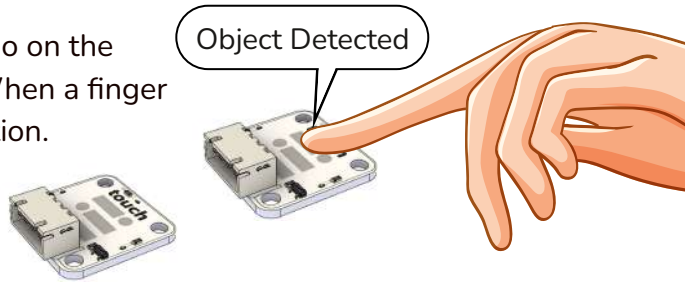





In this mode, if a conductive object, such as a metal ball, contacts both bolts, it can be detected.

## ● Logo Touch Mode

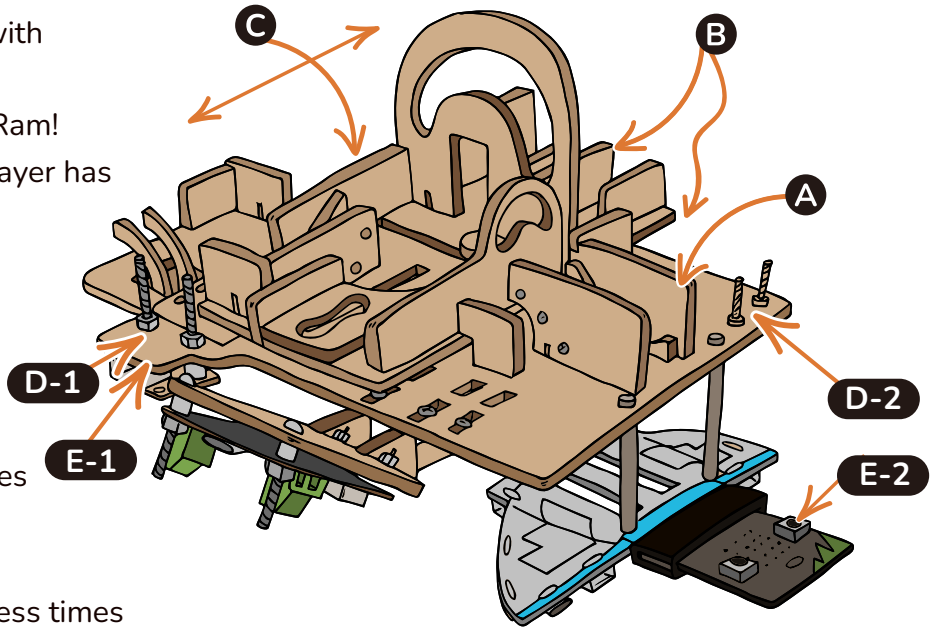
This mode is designed to be activated by a finger. The logo on the module's PCB is made of exposed conductive material. When a finger touches the logo, it closes the circuit and triggers a detection.




# Example Applications

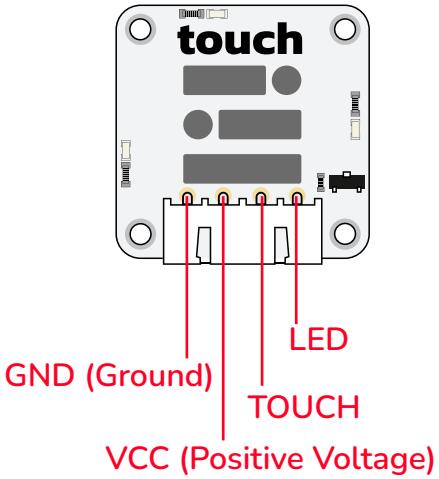
To illustrate the Touch module, here is the **Amazing Mine** project, where it is used in the Mission Monotonia kit.

- **A** A player places a ball in the start position and must tilt the game to get the ball all the way around to the finish.
- **B** There are two floors: the ground floor and the yoke (as in scotch yoke).
- **C** The yoke constantly moves from side to side simulating the shakes.
- **D** The metal ball must connect with two Touch modules
  - **D-1:** The first opens the Trap Ram!
  - **D-2:** The second shows the player has reached the end.
- **E** The yoke stops moving when
  - **E-1:** The Trap Ramp is active
  - **E-2:** Button A is pressed
- **F** The game gets harder and harder each time a player makes it to the finish line
  - **F-1:** The yoke moves faster
  - **F-2:** The yoke can be paused less times



# Connections

The Touch module features a 4-pin XH connector with the following pinout:

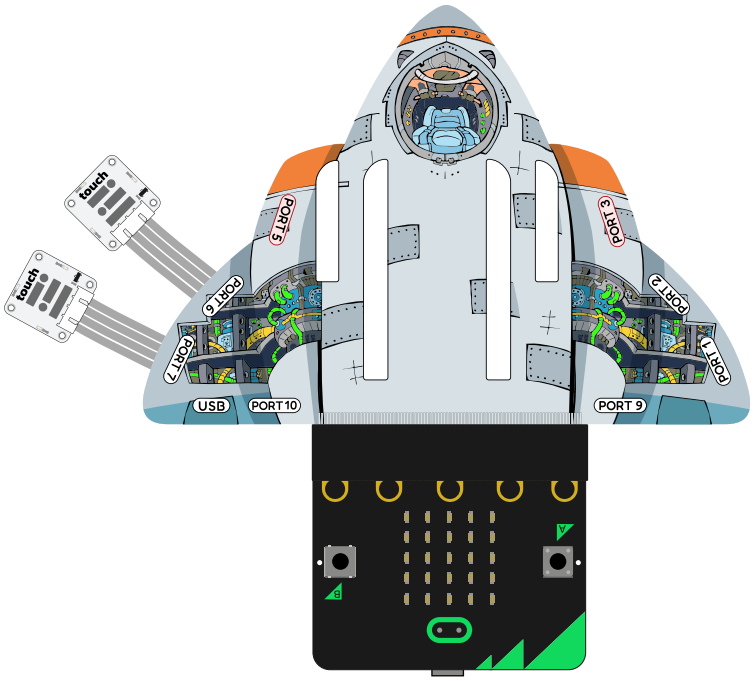



The module is compatible with both 3V and 5V systems.

The LED pin does not directly power the LEDs. Instead, it serves as a signal to a MOSFET (Metal-Oxide-Semiconductor Field-Effect Transistor) on the module. This design allows the LEDs to be controlled safely with low-power signal level microcontrollers without drawing too much current from the signal pins.

- **Connecting to the Bolt Board**

Due to the need for specific signal pins, the Touch module can only be connected to the Bolt Board using Ports 6 and 7. These ports provide the necessary power and signal lines for both the touch sensor and the blue LEDs.

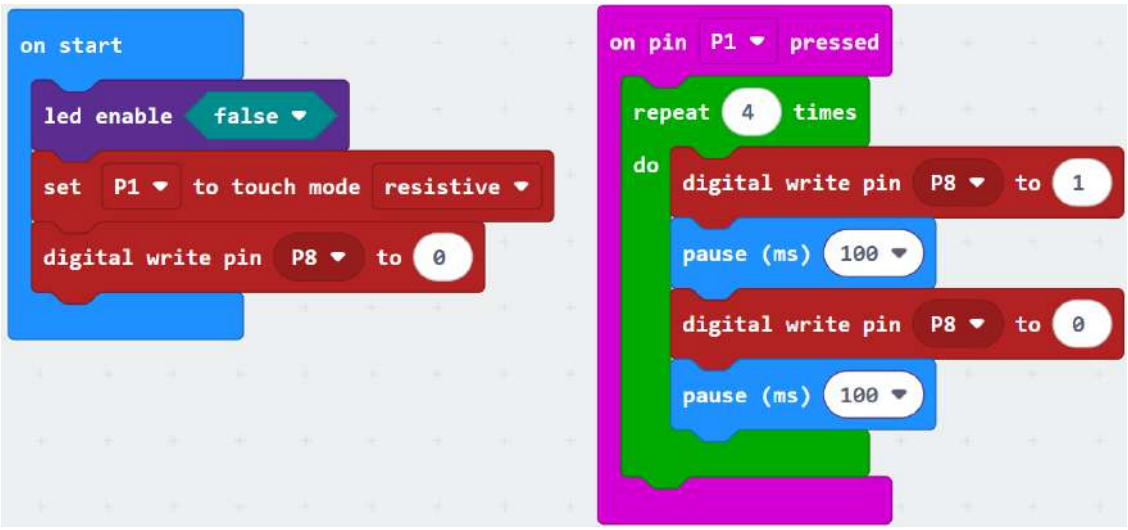



# Coding

- **Simple Coding Example**

In this simple coding example, we will assume the Touch module is connected to Port 6 on the Bolt Board, which corresponds to micro:bit pins P1 for the touch signal and P8 for the LEDs. Remember that the pin numbers would need to be adjusted accordingly if you are using another port.

When the program runs, the micro:bit's LED matrix will turn off. Then, every time the Touch module detects a connection, its blue LEDs will blink four times.



## › on start

- The on start block runs once when the micro:bit is powered on.
- led enable false: While this block isn't always necessary, the pins of the LED matrix can sometimes interfere with projects. It's good practice to include it if you are not using the LED matrix. This is especially important when using Port 7, as the LEDs on the module will always be on without this block.


- set P1 to touch mode resistive: This block, found in the More section under the Pins drawer, is crucial for setting the mode for the touch sensor. It allows the micro:bit to correctly interpret the touch input on pin P1.


- digital write pin P8 to 0: This block ensures that the Touch module's built-in LEDs are turned off when the program starts.

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## › on pin P1 pressed

- The code within this block runs every time a touch is detected on pin P1. This is the code that is executed when a connection is made across the touch sensor.
- repeat 4 times: This loop will repeat the code inside it four times.
- digital write pin P8 to 1: This block turns on the Touch module's blue LEDs, indicating that a touch has been detected.


- pause (ms) 100: This block creates a brief pause, so the LED is on long enough to be seen.
- digital write pin P8 to 0: This block turns the LEDs off again.


- The combination of these blocks inside the repeat loop will make the blue LEDs blink four times whenever the Touch module is activated.

# Safety and Best Practices

The Touch module is designed to be a safe and educational tool. To ensure a positive learning experience, please follow these best practices:

- **Compatibility:** The Touch module was designed specifically for use with the amomii Bolt Board. While it can be used with other microcontrollers, it is crucial to verify that the voltage and pin requirements are compatible to avoid damage. Incorrect connections can cause irreversible harm to the components.
- **Troubleshooting:** If the module becomes warm to the touch, immediately disconnect the power and allow it to cool down before inspecting the connections. If the issue persists, please contact amomii technical support.
- **Proper Handling:** Use caution when connecting and disconnecting the module to avoid bending pins.

By following these simple guidelines, you can ensure a safe and enjoyable experience with the Touch module.

# Revision History

| Date | Revision | Changes |
|---|---|---|
| September. 01. 2025 | 1 | First release |