The sensor module is based on a new nano pressure-sensitive material and a comfortable Young's modulus ultra-thin film substrate. It has both waterproof and pressure-sensitive functions. When the sensor senses the external pressure, the sensor resistance changes. We use the circuit to convert the pressure signal sensed by the sensor into the electrical signal output with corresponding change intensity. In this way, we can get the pressure change by detecting the change of electrical signal.

The module is compatible with various MCU control boards, such as Arduino Series MCU. The module contains 2 interfaces for you to choose from. One is the anti reverse connection white terminal with a spacing of 2.54mm. When in use, we can stack a sensor expansion board on the single chip microcomputer. The module is connected with its own wire, and then connected to the sensor expansion board, which is simple and convenient. The other is the row pin interface with a spacing of 2.54mm, which can be directly connected to the single chip microcomputer by using the male to female DuPont line.

Specification parameters:

Conductor length: 200mm

Working voltage: DC 3.3-5v

Interface: anti reverse connection interface / pin arrangement interface

Size of locating hole: 3mm in diameter

Control signal: analog signal

Measuring range: 0-5kg

Thickness: < 0.3mm

Response point: 150g

Repeatability: < ± 9.7% (60% load)

Consistency: soil 10%

Durability: > 1 million times

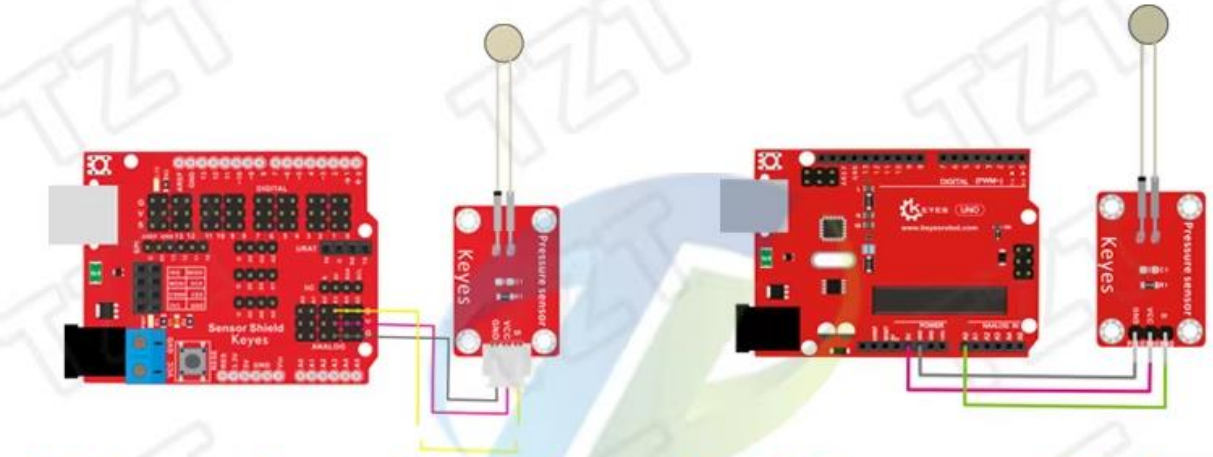
Initial resistance: greater than 10mq (no load)

Response time: < 1ms

Recovery time: < 15ms

Operating temperature: - 20 ℃ - 60 ℃

Wiring diagram:



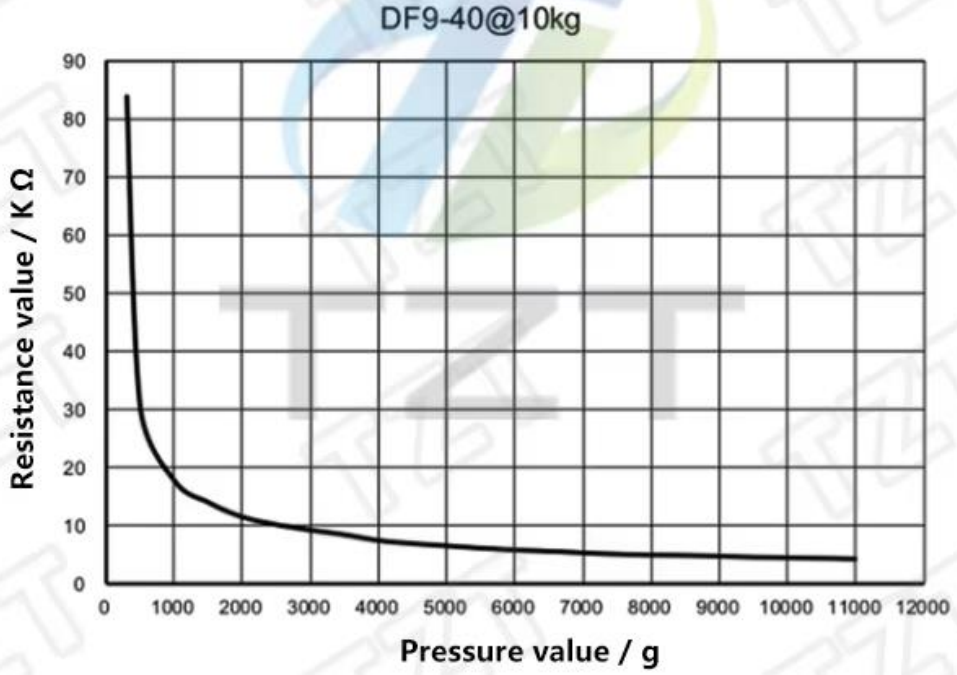
Anti Reverse Connection Interface Needle Arrangement Interface

Matters needing attention:

1. The sensor module uses a sensor element in series with a 510k Ω resistor. One end of the sensor is connected to 5V power supply, one end is connected to 510k Ω resistance, and the resistance is connected to GND. During the test, one end of the sensor connection resistance is the signal end, which is connected to the analog port.

2. According to the above description, we get the calculation formula of resistance and analog value: r = (1023-a0) * 510 / A0, the unit is k Ω

3. According to the above formula, we can get the resistance value of the sensor element. By observing the following pressure resistance diagram, we can roughly get the pressure value. We do not have a detailed formula to calculate the specific pressure value.



4. It can be observed from the picture that when the pressure value is greater than 5000g, the pressure value changes and the resistance value hardly changes. Therefore, we suggest that the maximum pressure value is 5000g during the test

5. Because the sensing area of the sensor element is concave, the test result can be obtained only when the test object is placed in the sensing area in the middle of the wafer; If the sensor is placed directly on the plane and the test object is placed in the sensor sensing area, the test result will not be obtained. Therefore, we need to pad a small object in the sensor sensing area, and then place the test object on the small object in the sensor sensing area to test the results.

Product use:

It can be used in smart home, consumer electronics, automotive electronics, medical equipment, pressure detection, intelligent robot and other fields.