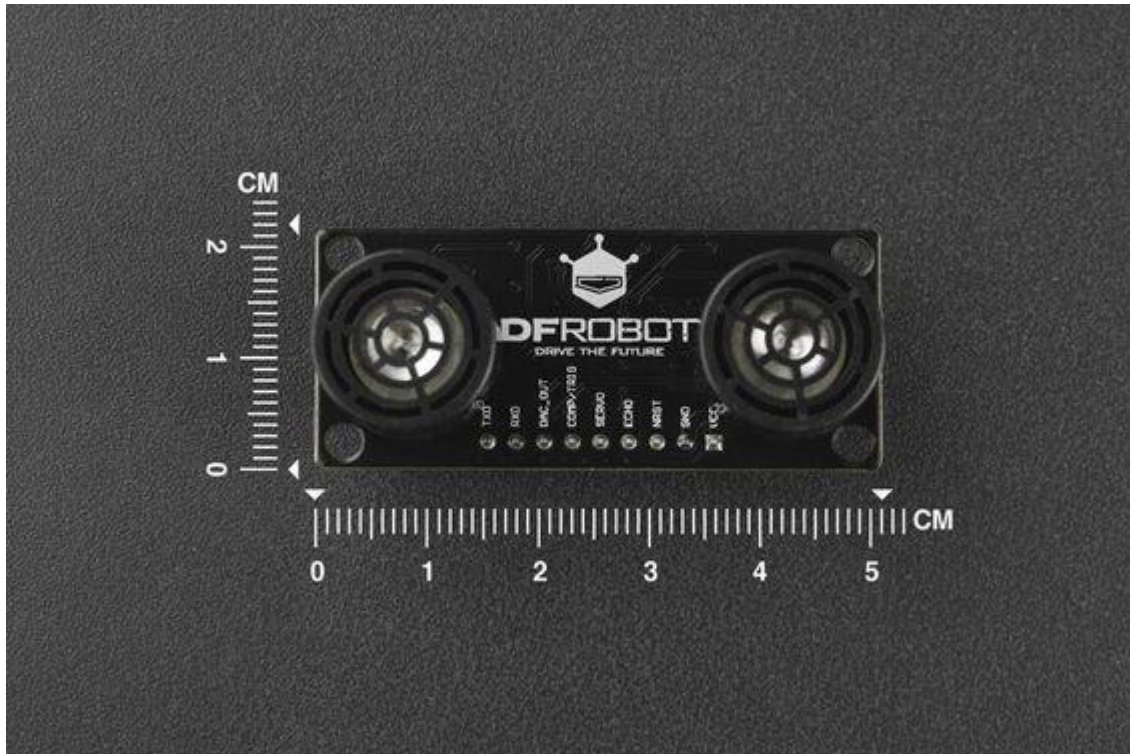# Fermion: URM37 Ultrasonic Distance Sensor Breakout (2～800cm, RS232 / UART)
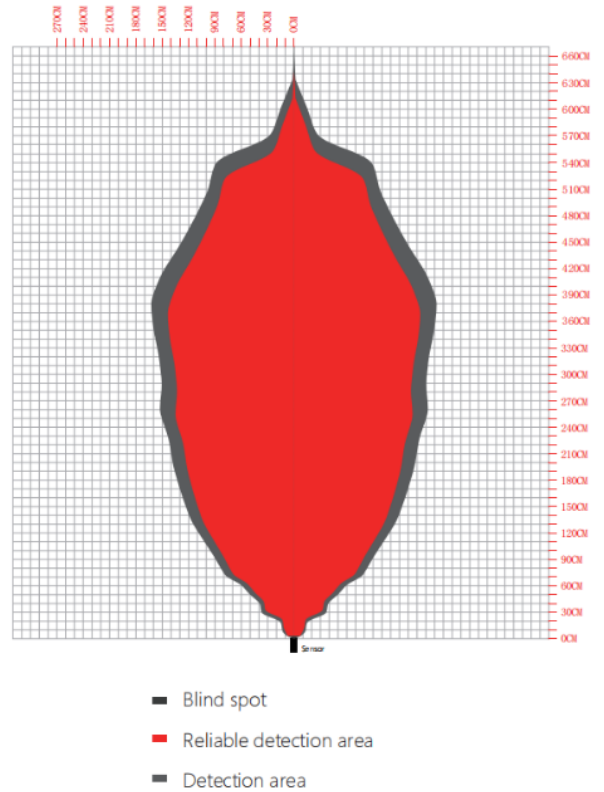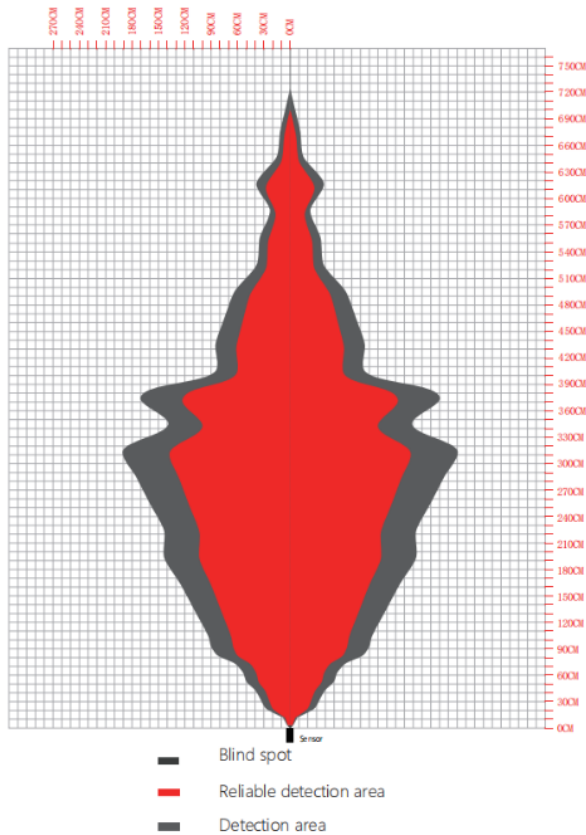
SKU: SEN0001

INTRODUCTION

URM37 V5.0 is a powerful ultrasonic sensor module with built-in temperature compensation to ensure accurate distance measurement in the scene of temperature-changing applications. It has a rich interface and offers various outputs: analog output, switch, serial (TTL and RS232 level optional), PWM, and so on. With analog mode, the sensor outputs voltage which is proportional to distance, it can be connected to Arduino, Raspberry Pi, and LattePanda(windows 10 development board). The module can be used to measure the rotation angle of the servo. Connected with an external servo, it changes into a spatial ultrasonic scanner. URM37 has been on the market for many years and plays an important role in various fields, and we are constantly optimizing and improving it. The mechanical size,

pin interface, and communication commands of this version（V5.0）are compatible with older versions. Based on the old version, the following improvements have been made:

- The range has been increased from 5~500cm to 2~800cm
- The ranging performance is very stable at the voltage range of 3.3V~5.5V.

URM37 V5.0 Ultrasonic sensor, the current version has better intelligence capabilities, meanwhile, mechanical dimensions and pin interface and communication commands are compatible with V4.0:

- With the use of a better ranging method, the measurement distance is further and more stable. if there is a need for customization, please contact the company.
- The module uses RS232 serial port for higher reliability, and the data can be collected through the computer serial port, which is very convenient to write communication programs.
- Serial level selected from the skipped stitches to button, user can easily select RS232 or TTL-level output level output by pressing the settings(after reboot).
- The measured distance can be output via PWM, which eases the use process of the module.
- Pre-set a comparative value for the module, under the mode of automatic measurement, if the measured distance value is smaller than the pre-set value, the pin COMP/Trig will output a low level. In this way, this module can be used as an ultrasonic proximity switch.
- The module is equipped with the function of servo controlling. Under the mode of non-automatic measurement, it can combine with a servo into a 180° measuring module to scan the obstacles at the range of 0~180°.
- The module has 123 bytes of EEPROM in memory whose values are kept when the board is turned off.
- The built-in temperature compensation circuit of the module is able to increase the accuracy of the measurement.
- The module has a built-in temperature measurement component to read the environmental temperature with a resolution of 0.1℃.
- Power reverse protection
- Automatic measurement of time intervals can be modified.
- Analog voltage output, voltage, and the measured distance are proportional.

URM37 Ultrasonic Distance Sensor Beam Angle

SPECIFICATION

- Operating Voltage: 3.3V ~ 5.5V

- Operating Current: 20mA

- Working temperature: -10℃ ~ 70℃

- Detecting range: 2cm-800cm(ultimate range 1000cm)

- Resolution: 1cm

- Accuracy:1%

- Measuring Period：＜100ms（Max）

- Dimensions: 22mm × 51 mm

- Weight: about 25g

OPTIONAL PARTS

- URM Sensor Mounting bracket
- Case for URM37 with Interface to Servo (by MM-CNC)

PROJECTS

- Mr.Green (aka Bean)

DOCUMENTS

- Wiki (URM37 V5.0 Ultrasonic Sensor (SKU:SEN0001))
- Dimension Diagram
- Software "HelpMate"
- Arduino Library Tutorial

SHIPPING LIST

- URM37 V5.0 Ultrasonic Sensor x1