UM0090-000

SPECIFICATIONS

■ Model:FA01T04-UM0090-000

■ Electrical Specification

| Principle	Time of flight measurement by ultrasonic wave
Range of measurement	17～300cm (object: flat surface)
Frequency	58kHz
Measurement resolution	＜1cm
Response time	＜1ms
Power-up delay	≤1s
Blind zone	17cm
Output	Measured distance with serial port output (cm)
Trigger mode	Low level pulse, pulse width≥50us
Working environment	indoors/outdoors
Working temperature	-40℃～80℃
Storage temperature	-40℃～85℃
Relative humidity	≤95%（No condensation）
Power Supply Voltage	DC5V
Working Current	≤10mA

■ **Response Curve**

in horizontal direction

(unit: cm)

Module
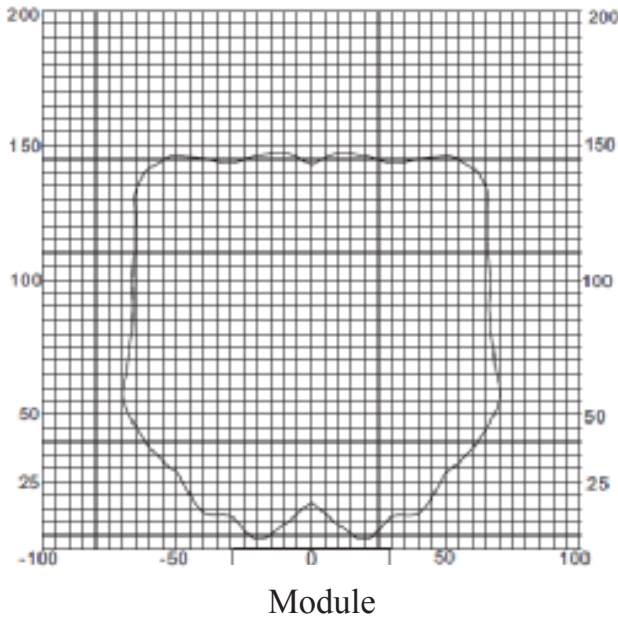
The arc region is the area where an Φ7.5cm round stick can be detected.
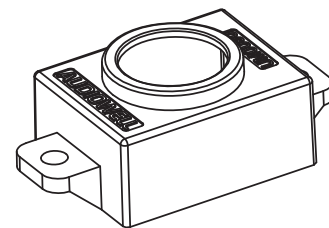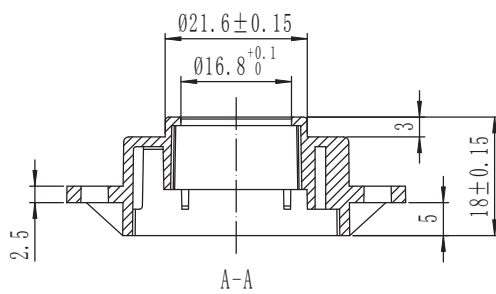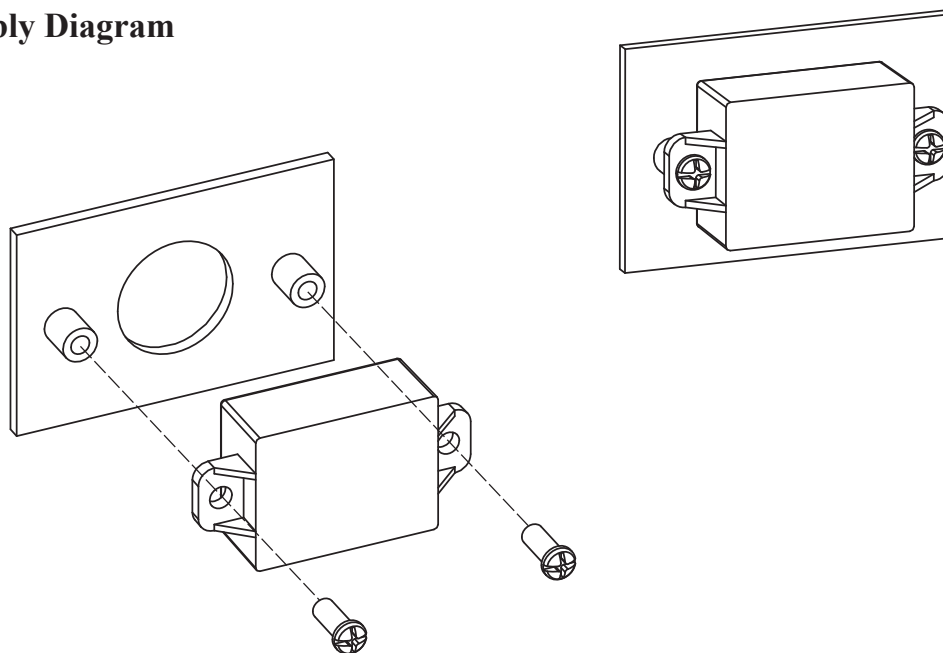
in vertical direction

(unit: cm)

Module
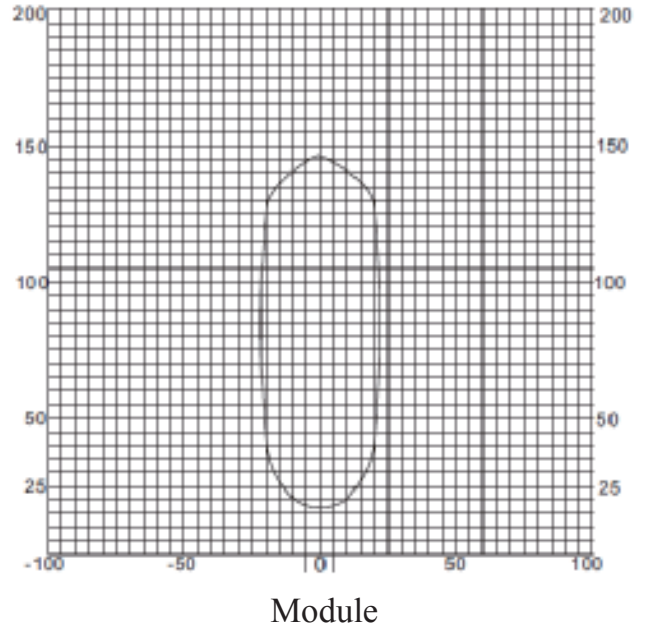
The arc region is the area where an Φ7.5cm round stick can be detected.

■ **Appearance and Structure (Unit :mm)**
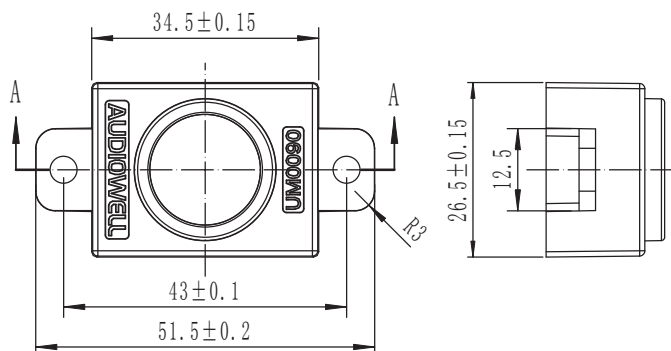
■ Assembly Diagram

■ Output Format

Interface definition

An 4PIN XH1.0 terminal is used for output, which is defined in the following diagram. The module goes into dormant state after power up. It can be woken up by a low pulse longer than 50us and output distance value which is in the range of 17-300cm. When the measurement is completed, the module automatically enters a dormant state until it is woken up again by a low pulse longer than 50us.
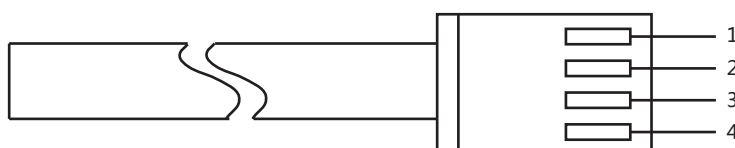
Wire No.	Pin Function	Wire Color	Remarks
1	VCC	Red	DC 5V
2	GND	Black	GND
3	OUTPUT	White	Level Output
4	RX	Yellow	Level Output

Communication Protocol

The measurement result is outputed by UART(TTL level), the unit is cm. Every 10bit is a data frame, of which the format is as follows:

bit1	bit2	bit3	bit4	bit5	bit6	bit7	bit8	bit9	bit10

Bit1:Start bit   bit2~bit9：Data bit   bit10：Stop bit   Baud Rate：9600 bps

Data Format

Send character "n" in character mode, 1 byte.

2. Send character "1" in character mode, 1 byte.

3. Send decimal character "." in character mode, 1 byte.

4. Send character "v" in character mode, 1 byte.

5. Send character "a" in character mode, 1 byte.

6. Send character "1" in character mode, 1 byte.

7. Send character "=" in character mode, 1 byte.

8. Send the hundreds digit of the measurement result in character mode, 1 byte.

9. Send the tens digit of the measurement result in character mode, 1 byte.

10.Send the single digit of the measurement result in character mode, 1 byte.

11. Send the terminator "0xff".

Example: n1.val=125 means the distance from the probe to the object is 125cm.