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Thank you for choosing our vehicle detection sensor. This kind of sensor is mmWave technology radar sensor which widely used in parking industry.

It is installed on parking barrier box and detect the area under the barrier arm, which ensures that if people or vehicle are detected within the detection zone, the arm will not close so that can avoid the damage to people vehicle.

To ensure the best performance of the sensor product, firstly please carefully read this user manual before use ,and then install and config it strictly following the instructions provided in this manual.

***specifications & designs may be changed without prior notice.

1.Introduction	3
2.Technical Specifications	4
3.Features	5
4.Installation Instructions	6
5.Cable connection	8
6.Configuration Instructions	10
7.Remarks	13
8.FAQs	14
9.Packing List	15

Vehicle detection sensor is developed for the entrance and exit management of parking lots or underground garages.It can precisely control the up&downs of the barrier arm by cooperating with the gate main control board , the sensor detection zone can be configured by mobile App which could effectively avoid the "accidental injury" of the barrier arm to the passing vehicles or people. so that the anti-fall function will be achieved.

The sensor is radar sensor and adopts millimeter wave technology with the highly integrated RF chip SOC scheme, which has the characteristics of small size, low cost, all-weather working capability, high detection sensitivity, high precision,easy debug&installation, very good stability and reliability。 It is a new type detector which can be perfect alternative of loop detectors.

The sensor antenna adopts multiple transmitting and multiple receiving design that enables the sensor good angular resolution and high angle measuring accuracy. The signal processing and control unit apply DSP+ARM dual core architecture. Through the joint optimization design of software and hardware, this product can accurately identify and distinguish the targets passing through the barrier arm area, and avoid the accident of "damage the targets such as vehicle or person" and "not dropping arm".



Model:	ITS-AX series
Detection distance	1-6m
Detection width	0.5-1.5m (left) /0.5-1.5m(right)
Working frequency	79GHz
Supply voltage	9-36Vdc/ (12Vdc)/1A
Power	< 2.5W
Output	Relay: NO/NC
Interface	bluetooth/RS485
Dimension	107.9*73.6*17.2mm
Net weight	140g
Enclosure rating	IP65
Working T°	-40°C~85°C
Cable length	1m
Installation	barrier gate box install
Certification	CE.FCC.RoHS

1

2

3

4

3.Features

Sensor appearance shown in Figure 1. The main features are:

● LED indicators:

Two LED indicators on the front of sensor. Red LED is for power, it will stay on when power on. Green LED is for signal, it will stay on when objects detected in the detect area and turns off when there is no objects.

● Detection zone configuration:

sensor default detection length is 3m in front and 0.5m left & right sides(±0.5m). Different detection areas can be configured via mobile APP or laptop debugging software.

● Configuration parameters saving and reload:

Configuration such as detection area can be automatically saved, and the latest configuration parameters will be loaded after sensor power off and restart.

● Firmware upgrade:

The firmware can be upgraded online through App or RS-485 ,no need to dismantle the sensor, and the new firmware will be effective just by restarting the sensor power.

● Stable performance:

millimeter wave sensing capability is strong and work perfectly under different light illuminations, climates such as rain, fog or snow and dust.

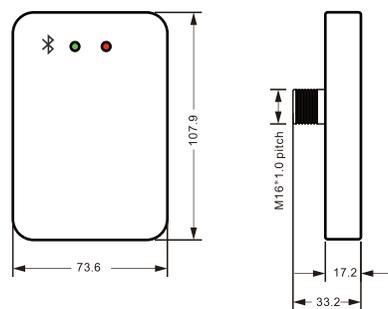


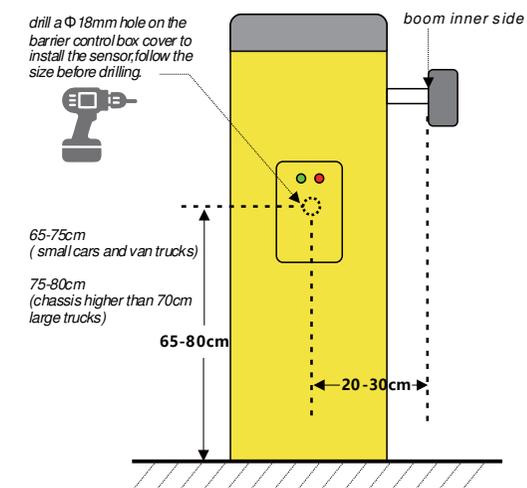
Figure 1. appearance (picture for reference only)

5

4.Installation Instructions

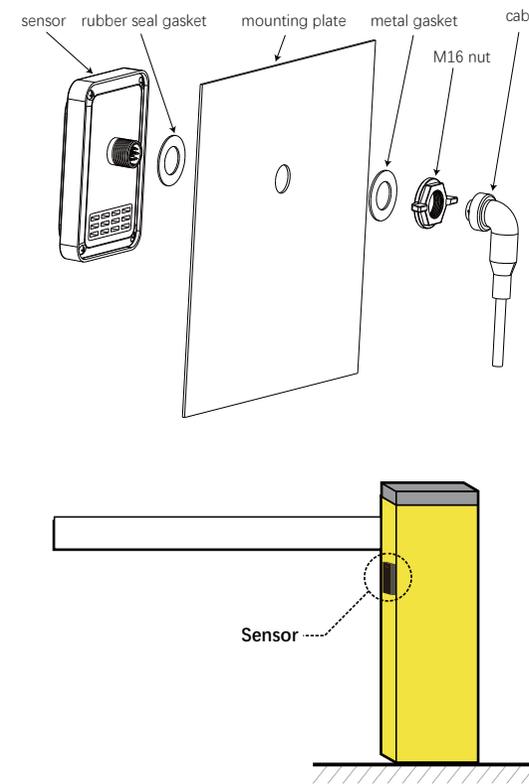
The sensor should be installed on the surface of barrier gate box and vertically to the ground. The installation must follow the below steps:

Step1. installation position



6

Step2. mounting process



7

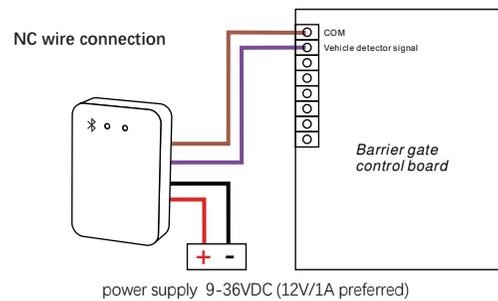
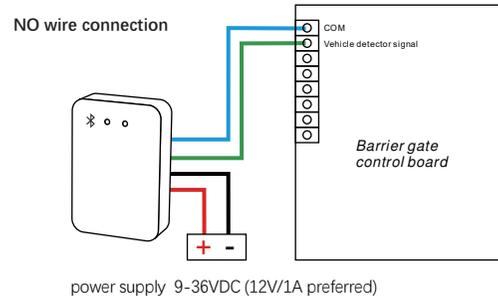
5.Cable connection



No.	Cable ID	Color	Description
1	9~36V	Red	positive
2	GND	Black	negative
3	B-/RX	White	RS485 B-
4	A+/TX	Gray	RS485 A+
5	NO1	Blue	Normally Open1
6	NO1	Green	Normally Open1
7	NC2	Brown	Normally Close2
8	NC2	Purple	Normally Close2
9	Input	Orange	Spare
10	GND	Yellow	

8

6. Configuration Instructions



The sensor can be configured through either the mobile App or computer software

Mobile App instructions:

After downloading the App to the mobile phone, click the App and see the user interface as Figure 2.
Click Connect Device button as shown in Figure 3, and select "Radar..." Bluetooth connection

Bluetooth connection
bluetooth name: "Radar-..." or " Mbit..."
user password: **88888888**

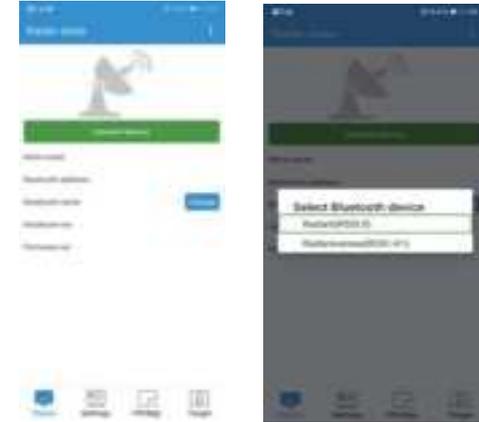


Figure 2

Figure 3

After successful connection, select sensor type, as shown in Figure 4, and enter App(App) interface as Figure 5, 6,7,8,9.

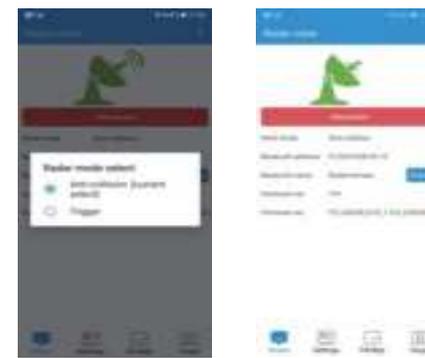


Figure 4

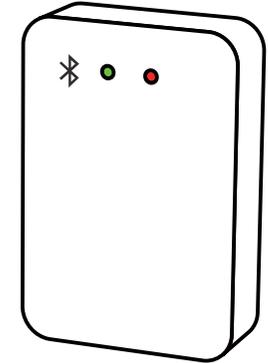
Figure 5

The sensor parameters can be modified and the background can be learned according to the actual environment. After selecting the firmware for sensor firmware upgrade, click upgrade firmware and wait for the upgrade to complete.



Figure 6

Figure 7



Vehicle Detection Sensor (Model: ITS-AX series)

Anti-fall Type

User Manual

please carefully read this user manual before installation.



9

10

11

3.After background learning, click Show false alarm to view false alarm. During the process of show false alarm, do not do other operations except stop display. Other detailed operations can be seen in the product manual and app manual.



Figure 8

Figure 9

12

7. Remarks

Please read the following instructions carefully before using sensor:

- Ensure stable power supply to avoid affecting the sensor performance, It is recommended to use 12A/1A power adapter separately for power supply.
- Sensor antenna is integrated inside, if sensor surface covered with other things (such as water drops, snow, dust, etc.) which may affect the normal operation of the sensor, it shall be cleaned in time.
- If environment changes (such as installing the guide column, ice cream cone, etc.) in the detection area, please learn to record the environment again.
- There shall be no objects (such as metal fence, billboard, license plate recognition camera, wall, etc.) in the sensor detection field which will affect the normal operation.
- It is not recommended to use sensor in a single lane where different types of barriers installed.
- It is recommended to install 2 sensors or remote control barrier arm when for entry & exit of semi trailer, concrete mixer, and other vehicles which chassis higher than 1m.
- It is not recommended to install sensor on muddy roads & extreme weather (rainstorm, heavy snow) which may affect the sensor operation stability.
- Set the detection range based on the barrier arm length, normally this range is slightly less than or equal to the barrier arm length, so as to prevent people or objects from being detected by sensor when passing beyond the gate arm.
- When environment record & learning, the fence / advertising type arm may shake when it falls to the ground. operation can be carried out after the arm falls completely.
- Relearn the background If there is arm rebound caused by the sensor.

13

- The installation height of the sensor should be 75-80cm in case of the metal strong scatterers like deceleration belt (for example iron plate) are directly in front of the sensor.
- Sensor applicable power supply : 9~36VDC, preferred 12V/1A power supply or connected to camera 12/24VDC power supply.

If any problems or special conditions on the jobsite, contact our technical support please.

8. FAQs

- 1-Q: The sensor green light always on after installation and the barrier arm doesn't fall.
A: new enhanced reflectors within the sensor detection range need to be removed from sensor field of view or background learning should be carried out again.
- 2-Q: the person stand in front of the sensor, the green light is not on.
A: The sensor is activated pedestrian / vehicle classification function, when vehicles trigger the sensor and green light on, The sensor then can detect.
- 3-Q: The sensor red light flashes.
A: It is recommended to connect an extra 12V-1A power adapter.

14

9. Packing List

No	Parts	Q'ty
1	Sensor	1
2	M16 nut	1
3	Gasket	2
4	Cable	1
5	Certificate	1
6	User Manual	1

Mobile configure App download (android & IOS)



Search "ISensor" in google play

15

FCC WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception,

which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum 20cm distance between the radiator and your body: Use only the supplied antenna.