

BSD

**Blind Spot Detection
System**

User Manual

77Ghz Microwave Single Sensor

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1、Product Introduction

Thank you for choosing our Blind Spot Monitoring Parallel Line Auxiliary System. The product consists of a 77GHz microwave sensor, two indicators (or chauffeured car blind zone rearview mirror), a buzzer and connecting harness.

This set of product gives early warning to the dangerous targets in the left and right adjacent lanes. With its unique ability to penetrate smoke, fog and dust, 77GHz millimeter wave Sensor can be used all-weather and all-day, and can detect objects in the signal area in real time, and calculate the speed, angle and relative displacement of 64 objects at the same time. It can detect the target within the farthest 50m, and finally output the alarm signals.

2、Product List

Name	Quantity
77GHz Microwave Sensor	1 pcs
Interior Warning Lamp	2 pcs
Power Cord	1 piece
Buzzer	1 pcs
Power Extension Cord	1 piece

Nam	Quantity
indicator Extension Cord	2 pieces
Mounting Bracket	1 pcs
Accessory Kit	1 bag
Specification	1 booklet

3、Technical Parameters

Properties	Parameters	Technical Indicators
System Properties	Operating Voltage	9-16v
	Operating Temperature	-40~80°C
	Power Consumption	2.5W
	Waterproof Rating	IP67
	Band	77GHz
	Refresh Rate	20Hz
	Case Size	28*28*22.5mm
Antenna Performance	Number of Channels Sent And Received	2Tx4Rx
	Pitch Beam Width	±25°
	Horizontal Beamwidth	±5.5°
Detection Performance	Distance Resolution	0.2m
	Speed Resolution	0.2m/s
	Speed Measurement Range	±200km/h
	Ranging Accuracy	0.2m
	Speed Measurement Accuracy	0.2m/s
	Goniometric Accuracy	1°
	Detection Distance	50m

4、Product Features

Overview of System Functions

The system uses microwave Sensors to monitor the environment on both sides of the rear of the vehicle, providing an early warning function when the driver is driving normally or changing lanes.

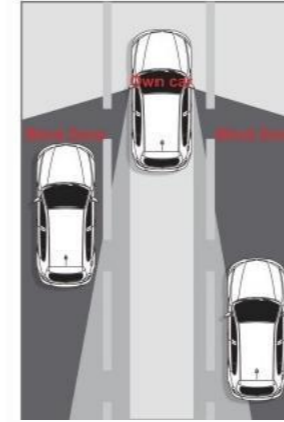
The monitoring area is divided into two sections: 4.4m on the left and right (no alarm in the middle 1.5m) and 10m in the rear, which are the blind zone monitoring area. The system will warn when vehicles enter the blind spot. At this time, LED light on same side is always on, when the turn signal turns on, the warning level upgrades, buzzer sounds, and LED light on same side flashes.

When the vehicle changing lanes, the detection distance reaches 50meters. when the target car is approaching and the collision time is equal or less than 4.0s, LED light on same side is always on. When turn signal turns on at the same time, buzzer sounds and LED light the same side flashes.

Product self-Inspection

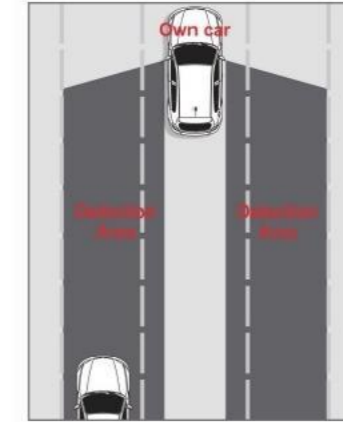
Normal state: After the Sensor powered on, the left and right prompt lights flash 2 times each.

Blind Spot Detection-BSD



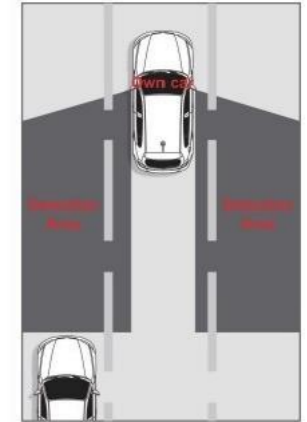
- ◆ System Starting Speed: $V \geq 10 \text{ km/h}$
- ◆ Early Warning Lateral Range: $1.5 \text{ m} \leq X \leq 4.4 \text{ m}$, $-4.4 \text{ m} \leq X \leq -1.5 \text{ m}$
- ◆ Early Warning Longitudinal Range: $0 \text{ m} \leq Y \leq 10 \text{ m}$
- ◆ Early Warning Strategy: moving target alarm in the alarm area
- ◆ Including active and passive overtaking, following the car at the same speed.

Lane Changing Assist-LCA



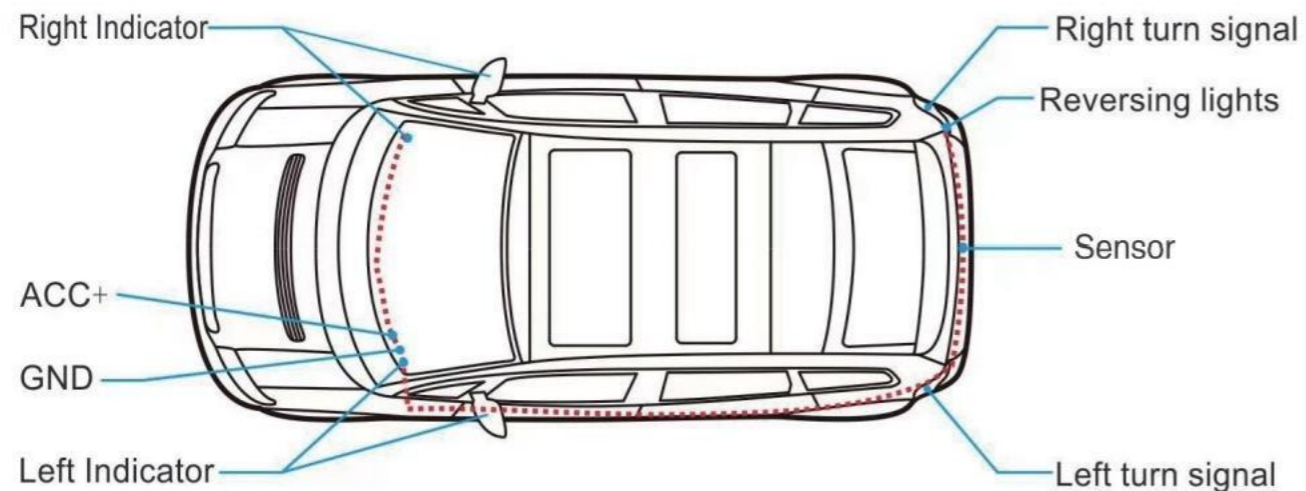
- ◆ Early Warning Lateral Range: $1.5 \text{ m} \leq X \leq 4.4 \text{ m}$, $-4.4 \text{ m} \leq X \leq -1.5 \text{ m}$
- ◆ Early Warning Longitudinal Range: $0 \text{ m} < Y \leq 50 \text{ m}$
- ◆ Early Warning Strategy: $\text{TTC} \leq 5.0 \text{ s}$

Active Overtaking Alert-AOA

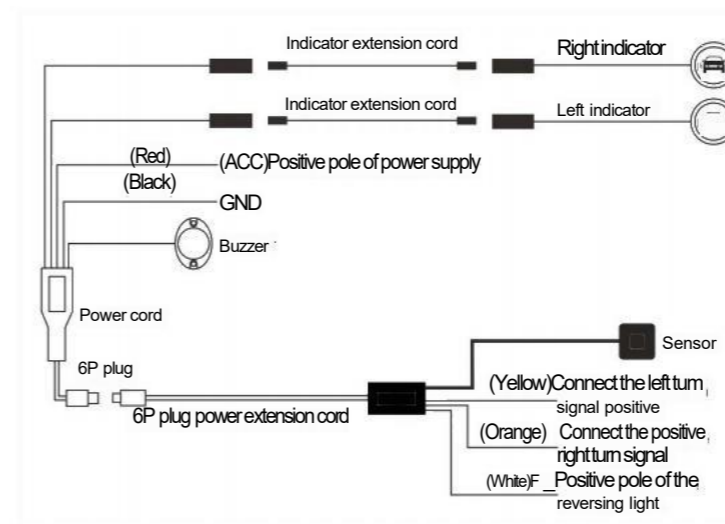


- ◆ Function Starting Speed: $V \geq 10 \text{ km/h}$
- ◆ Early Warning Lateral Range: $1.5 \text{ m} \leq X \leq 4.4 \text{ m}$, $-4.4 \text{ m} \leq X \leq -1.5 \text{ m}$
- ◆ Early Warning Longitudinal Range: $0 \text{ m} \leq Y \leq 10 \text{ m}$

5、Installation Diagram



6、Line Connections



1. Power cord connection method:

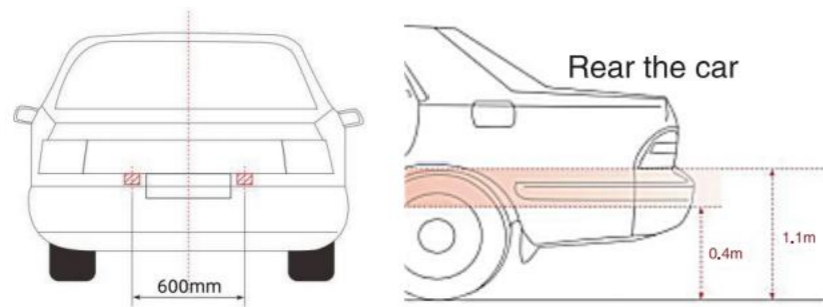
- Connect the black wire of the power cable to the negative pole of the car or tie the iron.
- Connect the red wire of the power cord to the car ACC power supply (car start-up/off/dead).
- The tip light extension cord and the prompt light correspond to the left and right labels, and the male and female are plugged in.

2. Power extension cable connection method:

- Route the power extension cable from the front of the car to the rear of the car, plug in the front of the car with the power cord, and plug in the line with the Sensor probe at the rear of the car.
- The yellow wire is connected to the positive pole of the left turn signal.
- The orange line is connected to the positive pole of the right turn signal.
- The white wire is connected to the positive pole of the reversing lamp.

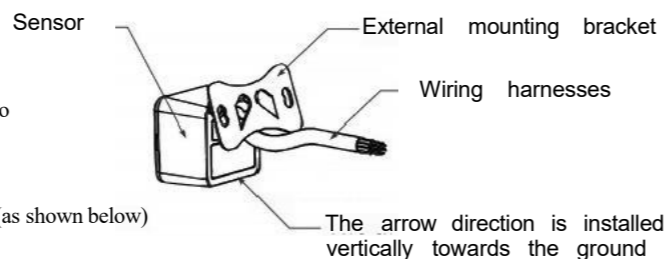
7、 Sensor Installation

The specific installation requirements are as follows



Note:

- Sensor installation height range 0.4~1.1m;
- Installation angle:the Sensor is perpendicular to the ground and parallel to the rear cross-sectional surface (refer to parallel to the license plate);
- The Sensor can be installed around the rear license plate;
- The Sensor outlet is on the top and the triangular arrow is on the bottom (as shown below)



8、 Troubleshooting and Repair

Faults	Possible Causes	Solutions
The left/right LED indicator shows that the target warning position is reversed	The left and right lights are reversed, and the Sensor is reversed up and down	1.Check the left and right light signs
		2. Check whether the Sensor surface is installed correctly
When the system detects the warning Target and turn signal turns on, the buzzer has no alarm sound.	1.The buzzer is on	1.Check whether the buzzer is normal
	2.Turn signal input problem	2.Check whether the turn signal wiring is on
After power-on, the light is always on and off	1.Wiring harness problem	1.Wiring harness insertion and unplugging inspection
	2.The LED light is damaged	2.Replace the LED light for inspection

Warning

Before making an actual lane change, be sure to visually inspect the surrounding area.

The system is only used to assist in detecting vehicles behind you when changing lanes. Due to certain limitations of the actual working environment, the vehicle is sometimes already in adjacent lanes, and the system warning signal will not flash or may flash delayed. You should not rely solely on this system, and the company will not be responsible for any accidents.