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Blind spot detection system

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77 Ghz microwave radar special model for motorcycle

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I. Product Introduction

Thank you for choosing the motorcycle blind spot monitoring and parallel driving assistance early warning system produced by our company. The product consists of a 77Ghz microwave radar, two indicator lights and a connecting harness.

This system product can warn the dangerous targets in the adjacent lanes. The unique ability of 77Ghz microwave radar to penetrate smoke, fog and dust can realize all-weather and all-time application, detect the 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 50M, and finally output the alarm signal.

II . The Product List

Name	Quantity
77Ghz microwave radar	1
Warning light	2
Power cord	1
Installing support	1
Accessories package	1
Instructions	1

III. Technical Parameters

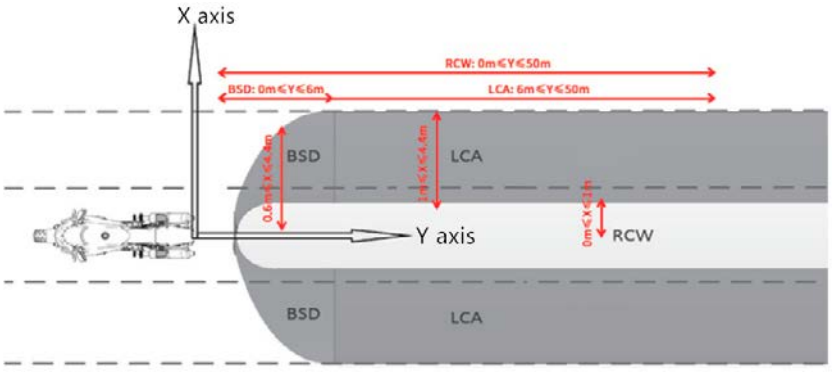
No.	Project	Specifications
01	Operating voltage	9 V- 32 V
02	Operating frequency band	77 -79Ghz
03	Working temperature	- 25℃ ～ +75℃
04	Power consumption	< 3 W
05	Waterproof grade	Ip 67
06	Distance resolution	0 . 2 m
07	Ranging accuracy	Better than 0. 1 m.
08	Detection range	0-50 m
09	Horizontal angle range	150°
10	Pitch angle range	±10°
11	Velocity measurement accuracy	0.1m/s

IV. Product Functions

Explanation

● After the ACC of motorcycle is powered on, the system can enter the working state immediately after the environmental adaptation test. When the motorcycle is turned off, the radar stops working.

The alarm range is centered on the rear of the motorcycle. The lateral distance is X and the longitudinal distance is Y. The left lateral distance of the center is negative, and the right lateral distance of the center is positive.



1. Product self-inspection:

Normal state of equipment:

1) After the equipment is powered on, the left and right indicator lights flash 3 times respectively;

2) The indicator light is on when the speed exceeds 15km/h and there is a target vehicle in the blind area.

2. Blind area monitoring function -BSD

● System starting speed: V ⩾ 15Km/h

● Horizontal range of early warning: 0.6m ⩽ X ⩽ 4.4m,-4.4m ⩽ x ⩽ -0.6m.

● Longitudinal warning range: 6m ⩽ Y ⩽ 15m (low speed mode), 15m ⩽ Y ⩽ 50m (low speed mode)

● Early warning strategy: alarm for moving targets in the alarm area, including passive overtaking and vehicle following at the same speed, with the warning light on.

3. Parallel auxiliary approach early warning function -LCA

● System starting speed: 0 ⩽ V ⩽ 25Km/h (low speed mode) and 25 ⩽ V ⩽ 120Km/h (high speed mode)

● Horizontal range of early warning: 1m ⩽ X ⩽ 4.4m, -4.4m ⩽ X ⩽ -1m

● Longitudinal warning range: 6m ⩽ Y ⩽ 15m (low speed mode), 6m ⩽ Y ⩽ 50m (high speed mode)

● Warning strategy: the approaching time ⩽ 4.0s, and the warning light is on.

4、Rear collision warning function -RCW

● System starting speed: 0 ⩽ V ⩽ 25Km/h (low speed mode) and 25 ⩽ V ⩽ 120Km/h (high speed mode)

● Horizontal range of early warning: 0m ⩽ X ⩽ 1m, -1m ⩽ X ⩽ 0m

● Longitudinal warning range: 0m ⩽ Y ⩽ 15m (low speed mode) and 0m ⩽ Y ⩽ 50m (high speed mode)

● Early warning strategy: there are vehicles approaching rapidly within the early warning range, and the collision early warning time ⩽ 3s, and the warning lights on both sides flash.

Ⅴ. Legend of Line Connection

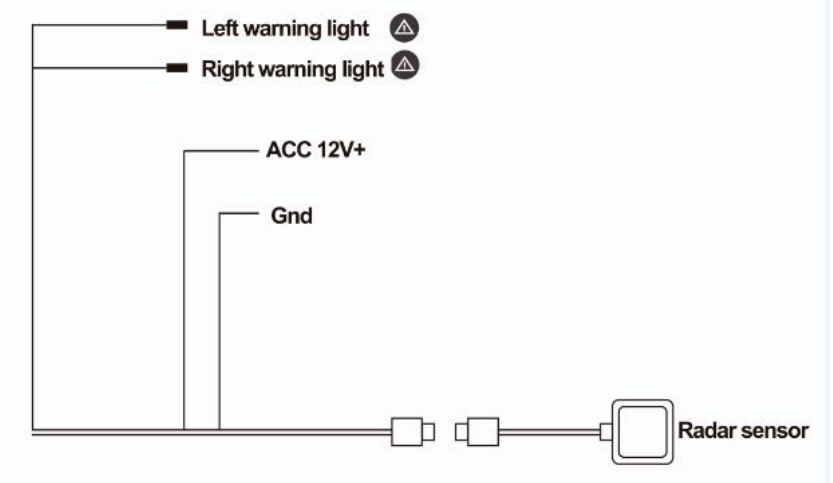
Connection method of power cord:

A.Connect the black line of the power cord to the negative pole of the motorcycle or ground it.

B. Connect the red line of the power cord to the ACC power supply of the motorcycle (the motorcycle starts normally/turns off without electricity).

C. Correspond the extension line of the reminder lamp and the reminder lamp according to the left and right labels, and connect the male and female connectors.

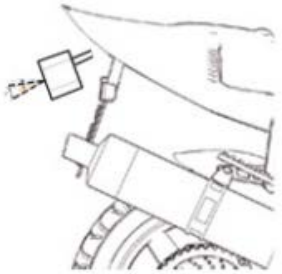
D. Fix the warning light to a position where the driving posture is easy to see.



VI .Radar installation method

1. Schematic diagram of installation of radar module and angle adjustable bracket

2. Radar installation location



installation pitch angle

the radar surface dips 10±2°

Note: the outlet is at the top

Note:

A. The radar is installed at the proper position at the tail with the outlet on the top;

B. The installation height range of the radar from the ground is 0.6 to 0.9m;

C. Installation pitch angle: the radar surface dips 10±2° ;

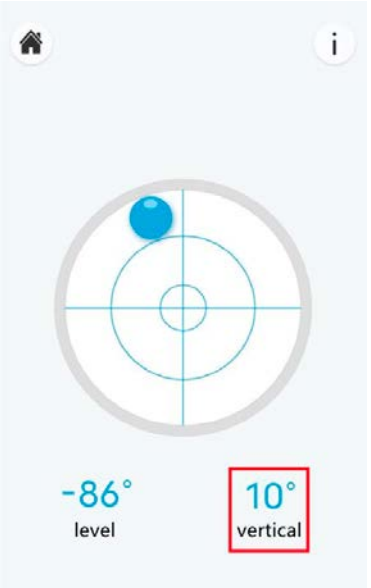
D. The included angle between the radar axis plane and the motorcycle body axis plane is 0±1.5° .

(Important note: Please operate the radar strictly according to the height & angle specified in the steps! ! !)

3. Radar inclination adjustment method:

A. Horizontal adjustment: the radar should be parallel to the cross section of the vehicle body.

B. Pitch angle adjustment: the mobile phone downloads the "level" APP. When in use, the mobile phone is attached to the radar head and the radar head tilts downward. When the vertical angle on the APP is 10°C , tighten the fixing screw to keep the radar tilted downward by 10°C !



Ⅶ . Troubleshooting and maintenance

Fault phenomenon	Possible reasons	Exclusion method
The left/right LED indicators show that the target warning position is opposite.	The left and right lights are installed reversely, and the radar is installed reversely up and down.	1. Check the left and right light signs.
		2. Check whether the radar surface is installed correctly.
The lights are always on and off after power-on.	1.Wiring harness problem LED lamp damage	1. Wiring harness plugging inspection
		2. Replace the LED lamp for inspection.

warn

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

The system is only used to assist you in detecting the vehicles behind you when changing lanes. Due to some limitations of the actual working environment, sometimes the vehicles are already in the adjacent lanes, but the system alarm signal lights do not flash or may delay flashing. You can't rely on this system completely, and our company won't be responsible for any accidents.

Ⅷ . Matters needing attention

1. Under the following circumstances, the radar may not give a warning:

a. The vehicle is located in the blind area behind the adjacent lane, and keeps the relative same speed for a long time.

b. The adjacent lane where the vehicle is located is extremely wide, which exceeds the calculation range of radar signals.

c. When crossing the peak of hill or mountain road

2. If the road width is narrow, two-lane vehicles may be detected.

3. The warning lights of this system may turn on in response to stationary objects (such as guardrails/walls/tunnels/green belts, etc.) on the road or roadside.