

# RK500-55 Non contact road condition sensor

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RK500-55 is a non-contact road surface state detector, thanks to remote sensing technology it's taken, it can not only avoid damage to the road, but also traffic interference during its installation. Multispectral measurement technology enables accurate detection of thickness of ice, snow, water on surface of the road.

RK500-55 detector is ideal choice for road conditions where installation of embedded pavement sensor is inconvenient or inapplicable. Remote installation, means that there is no need to slot-cut surface or shut down the road, its installation is safe and convenient. It's almost free of maintenance and ideal choice for road meteorological systems. It can be installed on existing weather stations or on other buildings which has unobstructed view to pavement.

## FEATURES

- Remote monitoring water, ice and snow
- Remote surface state sensing
- Measure amount of water, ice, and level of grip
- No embedded installation
- Anti-corrosion
- Infrared detection, distance up to 15.5 meters
- Easy for installation with shutting down the road
- Robust structure, 7\*24 hours monitoring

Parts:

1. Sensor with cable: 1
2. Bracket(optional): 1

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## SPECIFICATIONS

Item	Technical Specification
Measuring distance	2-15m
Measuring radius	23 cm
Angle	30-80°
Power Supply	DC12-24V
Power Consumption	0.6W
Operating Temperature	-40°C - +60°C
Operating Humidity	0-95%
Measuring Range	Water:0—10mm
	Ice:0—10mm
	Snow:0—10mm
	Level of Grip:0.01(slippery)—1(Strong friction)
	Road surface temperature:-40°C to +60°C (optional)
Road Surface	Concrete, asphalt pavement
Communication Interface	RS485, RS232
MTTF	1.5 x 1000000 hours

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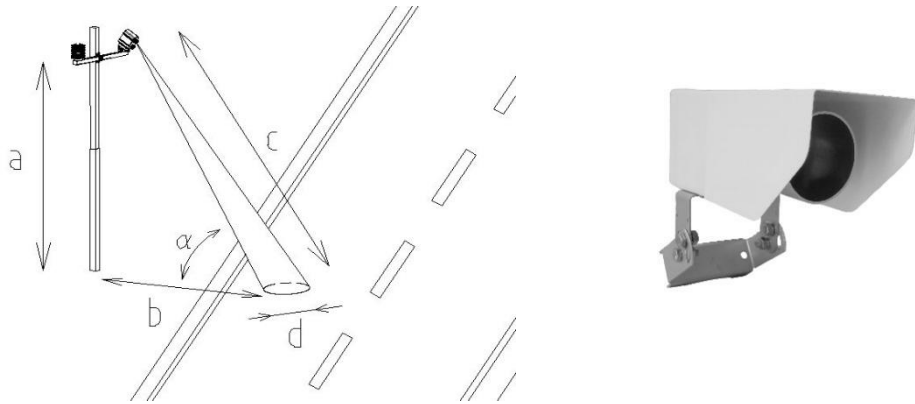
## ELECTRICAL CONNECTIONS

Connector ( cable )	RS485
Red	V+
Black	V-
Yellow	RS485A
Green	RS485B

Note: This product has been tested and complies with European CE requirements for EMC directive

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## DEMENSION



### Installation distance:

Measuring distance: The distance range of C in the figure is 2-15 meters;

The installation angle  $\alpha$  to the horizontal line is 30°-85°;

Installation height: 3-8 meters.

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The diameter (D) of the measuring range is proportional to the measuring distance (C). When the measuring distance is 10m, the diameter of the measuring range is 20 cm. When the measuring distance is 5m, the diameter of the measuring range is 10cm.

### Communication Protocol (MODBUS)

**Transmission mode:** MODBUS-RTU, **Baud rate:** 9600bps, **Data bits:** 8, **Stop bit:** 1, **Check bit:** EVEN

**Slave address:** the factory default is 01H (set according to the need, 01H to FFH)

#### Client sends:

**01 03 00 00 00 0D 84 0F**

#### Sensor Return:

**01 03 1A 00 03 AE 14 42 06 D7 0A 40 63 51 EC 40 18 70 A4 3F  
9D EB 85 3F 51 00 D1 00 00 60 9F**

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**Data:** Road temp: 4206AE14  $\geq$  33.67°C), Water: 4063D70A  $\geq$  3.56mm

Ice: 401851EC  $\geq$  2.38mm, Snow: 3F9D70A4  $\geq$  1.23mm

Wet slip coefficient: 3F51EB85  $\geq$  0.82, Pavement status: 00D1 (Muddy mixture - alarm)

Hardware Status: 0000

#### Note:

**1. All underlined is fixed bit;**

**2. The last one bytes is CRC check command.**

### WARRANTY

This product is warranted to be free of defects in materials and construction for a period of 12 months from date of lead time.

Liability is limited to repair or replacement of defective item.

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**CE** Complies with applicable CE directives.

Manual subject to change without notice. Version 1.0

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