



# RK500-55 Non-Contact Road Condition Sensor

## Overview

RK500-55 Non-Contact Road Surface Condition Detector employs advanced remote sensing technology to perform inspections without physical contact with the road surface. This preserves the structural integrity of the pavement and eliminates traffic disruptions caused by sensor installation. Its core multi-spectral measurement technology accurately identifies road surface ice, snow accumulation, and water film thickness with millimeter-level precision.

As an ideal alternative to traditional embedded sensors, this device is particularly suitable for scenarios where road excavation is impractical. Installation requires no road closures or pavement cutting—it can be directly mounted on existing weather stations or nearby structures, ensuring both operational efficiency and safety. Additionally, its low-maintenance design makes it a preferred component for road weather monitoring systems.

RK500-55 casing is sturdy and durable to ensure stable operation in harsh weather conditions and provide accurate data. By providing accurate road condition information, road management departments can be alerted to take appropriate remedial measures before dangerous driving surfaces are caused by weather factors.


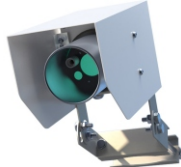
## Features

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 15m  
Easy installation

## Applications

Environmental monitoring  
Weather station  
Bridge road  
Rain and snow-prone areas  
Accident-prone areas  
Intense traffic area


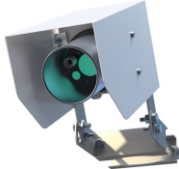
## Technical Parameter

Item	Technical Specification	
	Type A	Type B
Type		
Measuring Distance	2-15m	2-8m
Measuring Range	Ice:0.00—10mm	Ice:0—2mm
	Snow:0.00—10mm	Snow:0—2mm
	Water:0.00—10mm	
	Level of Grip:0.01—0.82	
	Road surface temperature:-40 °C to +80 °C (optional)	



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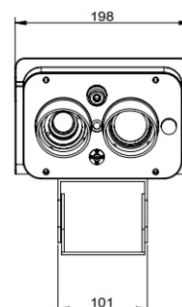
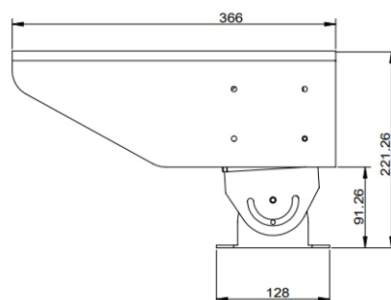
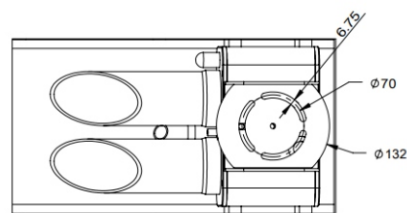
## Technical Parameter

Item	Technical Specification	
	Type A	Type B
Type		
Power supply	12-24VDC	
Measuring diameter	25cm	
Angle	30-80°	
Power consumption	5W(Including lens heating)	
Operating temperature	-40°C~ +80 °C	
Operating humidity	0 to 100%	
Accuracy	0.1mm	
Resolution	0.01mm	
Lens contamination detection	Automatic lens contamination level detection and compensation	
Road surface	Concrete, asphalt pavement	
Communication interface	RS485	
MTTF	10 years	
Safety	Infrared measuring technology, no radiation	

## Dimension

Unit:mm

Type A



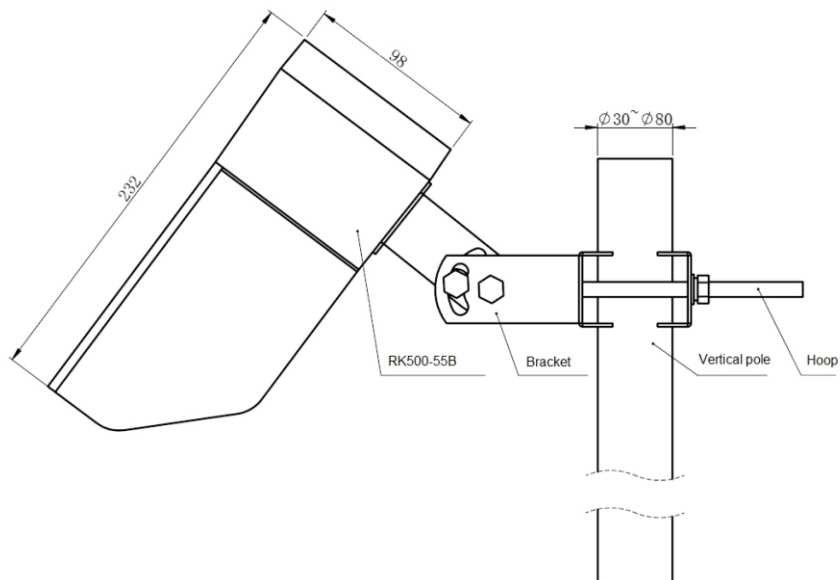


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## Dimension

Unit:mm

Type B



## Parameter Selection Table

Remark	Series	Type	Output	Road Surface Temperature	Cable Length	
RK						
	500-55					
		A				Type A
		B				Type B
			A			RS485
			X			Other
				A		With road surface temperature
				B		Without road surface temperature
					4000	Units:mm(Typ.)
					10000	Units:mm
					...	Units:mm

Example: RK500-55AAB4000 Type A,Output:RS485, Without road surface temperature,Cable length:4m.

Revision time	Reviser	Current Version	Remarks
20250722	Echo	V5.0	