

# RK400-10 Evaporation Sensor

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The product uses the high-precision weighing principle to measure the liquid weight in the evaporation pan, and calculates the liquid level of evaporation loss by measuring the difference of the liquid weight before and after the measurement. The evaporating dish is made with high-quality stainless steel, which has good anticorrosive and anti erosion characteristics. It ensures the measurement accuracy and can be used in conjunction with the automatic weather station or professional evaporation recorder.

## FEATURES

- High precision
- Easy installation
- Stable performance, good linearity
- Operation is simple
- Whole stainless steel material
- A variety of signal output

### Parts:

1. Rainfall sensor with cable: 1
2. Fixed foot and screw: 3

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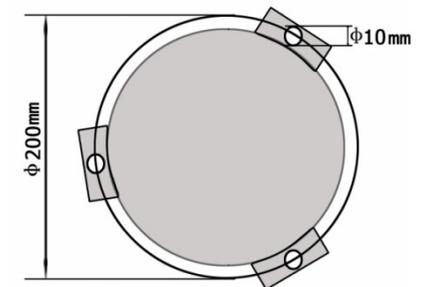
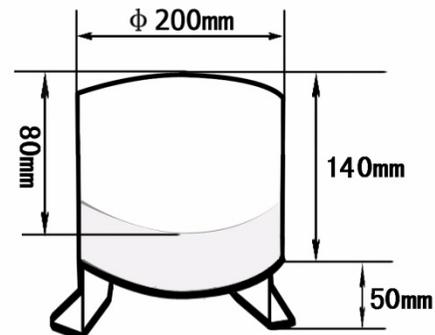
## SPECIFICATIONS

Item	Specification
Evaporation pan	Diameter : $\phi$ 200mm
Range	0-75mm
Response time	<1s
Accuracy	$\pm$ 1%
Power Supply	Mark on the label
Output	4-20mA,0-2V,0-5V,RS485
Operating temperature	-30+80°C
Ingress protection	IP65
Main material	304SS
Weight(unpacked)	2.5kg

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## MOUNTING

- 1.The installation should be kept away from the chemical corrosive environment;
- 2.The transmitter and wires should be kept away from high voltage electricity and heat sources;
3. Horizontal installation, water injection 75mm, try not to install under the trees, so as not to fall into the leaves.



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## ELECTRICAL CONNECTIONS

Connector (cable)	Current	Voltage	RS485
Red	V+	V+	V+
Black	V-	V-	V-
Yellow			RS485A
Green			RS485B
White	Signal		
Brown		Signal	

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

## OUTPUT CHARACTERISTICS

- Current(4-20mA)**

$$\Delta h = (75/16) * I - 18.75 \text{ (where } \Delta h = \text{Evaporation (mm), } I = \text{output current(mA) )}$$

- Voltage(0-2V,0-5V,0-10V)**

$$\Delta h = 37.5 * V \text{ (where } \Delta h = \text{Evaporation (mm), } V = \text{output Voltage (0-2V) )}$$

$$\Delta h = 15 * V \text{ (where } \Delta h = \text{Evaporation (mm), } V = \text{output Voltage (0-5V) )}$$

$$\Delta h = 7.5 * V \text{ (where } \Delta h = \text{Evaporation (mm), } V = \text{output Voltage (0-10V) )}$$

- RS485**

If the transmission distance is over 100m, please add a 120Ω terminal matching resistances on the front end and back end of bus interface respectively. See appendix for communication protocol.

## Communication Protocol (MODBUS)

**Transmission mode:** MODBUS-RTU, **Baud rate:** 9600bps, **Data bits:** 8, **Stop bit:** 1, **Check bit:** no

**Slave address:** the factory default is 01H (set according to the need, 00H to FFH)

- The 03H Function Code Example: Read The Evaporation**

**Host Scan Order(slave address:0x01)**

01 03 00 00 00 01 840A

**Slave Response**

01 03 02 00 23 F99D

**Evaporation:(0023)H=(35)D,35/10=3.5mm**

- The 06H Function Code Example: Modify the slave address**

**Host Scan Order (Changed from 01H to 33H):**

01 06 00 00 00 33 C9DF

**Slave Response:**

01 06 02 00 33 F8 9D

If you forget the original address of the sensor, you can use the broadcast address 0xfe instead, when using the broadcast address 0xfe; the host can only take one slave at a time.

**Note:**

1. All underlined is fixed bit;
2. The last two bytes is CRC check command.

## 5 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.

 Complies with applicable CE directives.

Manual subject to change without notice. Version 1.0

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