

USER GUIDE FOR CDY-14B EVAPORATION SENSOR

CDY-14B-01-MN-10

SEP-2024

This document is applied for the following products

SKU	CDY	HW Ver.	1.0	FW Ver.	1.0
Item Code	CDY-14B	Evaporation Sensor, 4-20mA RS485 0-5V Output, 304SS 0-75mm			

1. Introductions

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.



2. Specification

Item	Specification
Evaporation pan	Diameter : ϕ 200mm
Range	0-75mm
Response time	<1s
Accuracy	\pm 1%
Power Supply	5V,12-24V
Output	4-20mA,0-2V,0-5V,RS485
Operating temperature	-30-+80 $^{\circ}$ C
Ingress protection	IP65
Main material	304SS
Weight(unpacked)	2.5kg

3. Working Process

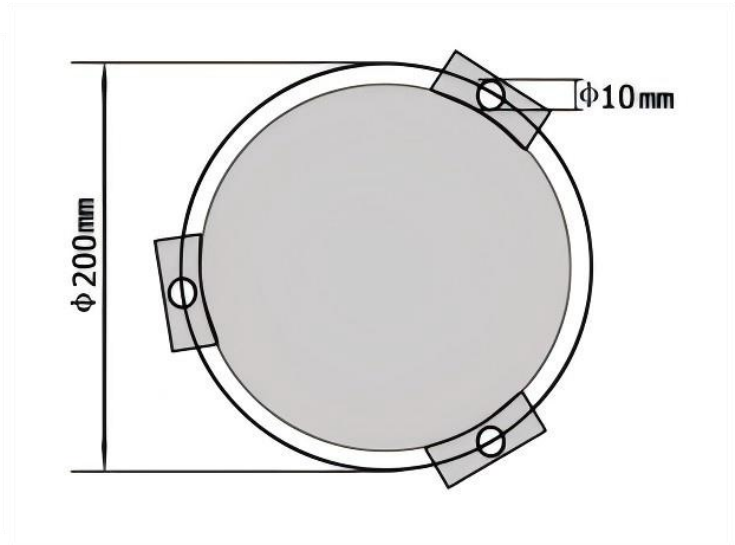
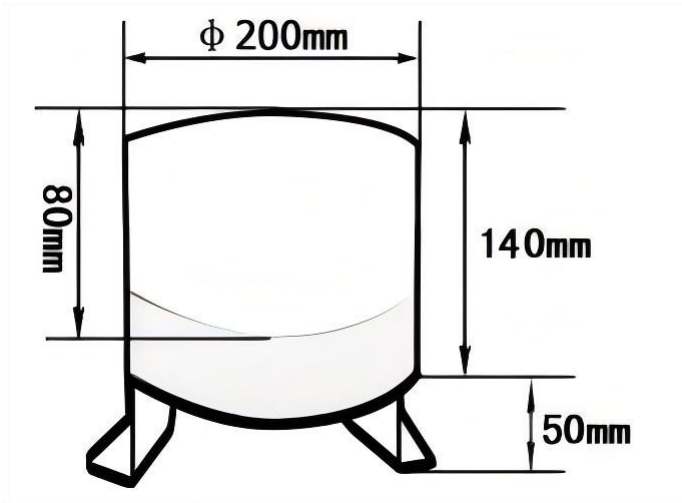
Weighing evaporation sensors determine evaporation by measuring the change in the weight of the water container. The water in the container is gradually reduced as it evaporates, and the sensor monitors the weight of the container in real time to calculate the amount of evaporation.



4. Electrical Connections

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

5. Dimensions



6. Installation

Mounting bracket (if required) :

Select the appropriate mounting bracket according to the characteristics of the installation position.

Install the bracket firmly in the selected position using screws or other fastening methods.

Install sensors:

Fix the evaporation sensor on the mounting bracket to ensure that it is firmly installed without loosening or shaking.

According to the type and installation requirements of the sensor, the direction and Angle of the sensor are adjusted so that it can accurately measure the evaporation amount.

Connecting cable:

Connect the cable of the sensor to the corresponding monitoring device or control system.

Ensure that the cable is securely connected and not loose or in poor contact.

Pay attention to the direction and protection of cables to avoid cable damage or interference.

7. 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)

- 7.1 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

7.2 The 06H Function Code Example: Modify the slave address

Host Scan Order (Changed the 01H to 02H):

01 06 00 30 00 02 0804

Slave Response:

01 06 00 30 00 02 0804

If you forget the original address, you should use the broadcast address(FEH) (ensure that no other devices on the bus at this time).

Note:

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

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

8. Support contacts:



Complies with applicable CE directives.

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