USER GUIDE FOR CDY-11A
RAIN & SNOW SENSNOR

This document is applied for the following products

SKU	CDY	HW Ver.	1.0	FW Ver.	1.0
Item Code	CDY-11A	Rain&Snow Sensor, RS485 Relay(NO) Output, ABS			

1. Introductions

CDY-11A Rain & Snow Sensor is a high sensitive detector to achieve qualitative detection of rain and snow. There is a ring conductor sense rain board on the surface. Products are optional automatic melting snow and melting ice function (automatic heating). When it rains or snows, it will output switch signal.

2. Specification

Item	Specifications
Supply Voltage	12-24VDC
Automatic heating	heating power:10W max.
Output	Relay(NO) RS485
Load Capacity(relay)	AC120V/2A ,DC24V/2A
Coil material	Gold-plated(Strong corrosion resistance)
Ingress protection	IP67
Operating Temperature	-30℃-+70℃
Weight(unpacked)	150g
Dimension	90*60*40mm
Shell material	ABS
Storage Condition	10℃-60℃@20%-90%RH
Item	Specifications

3.Working Process

Capacitive rain and snow sensors use the capacitance changes formed between rain and snow and sensor electrodes to detect rain and snow. When there is rain and snow covering the sensor surface, the capacitance value will change, which triggers the detection signal.
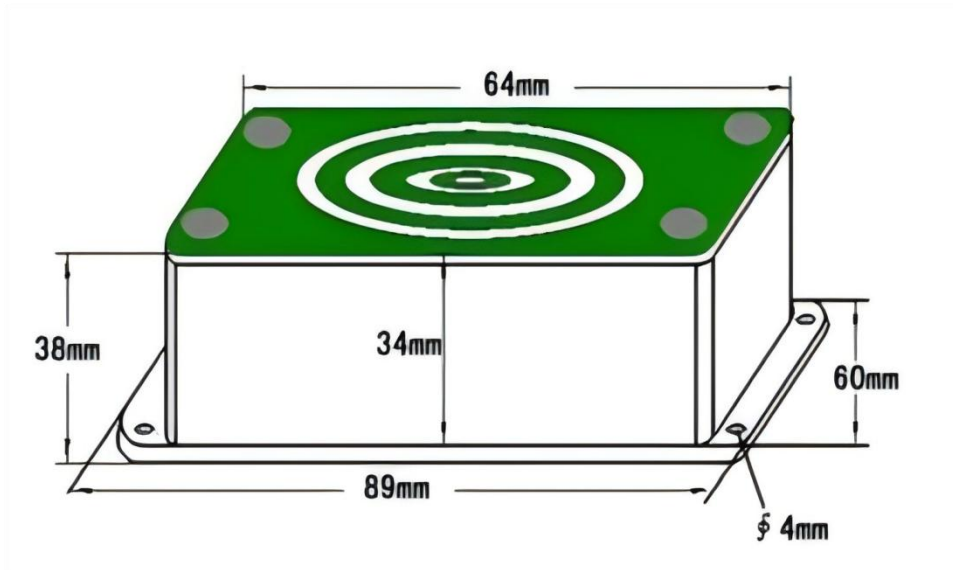
Resistive rain and snow sensors judge rain and snow conditions by detecting changes in resistance on the sensor surface. When rain and snow fall on the sensor, it will change the electrical conductivity of the sensor, causing the resistance value to change.
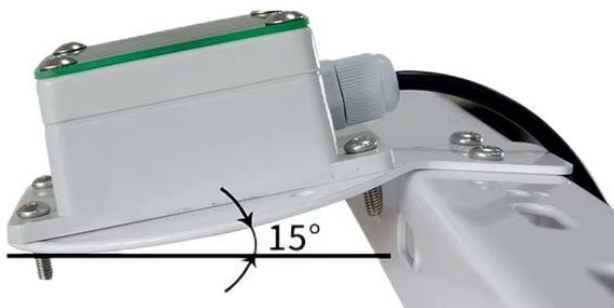
4. Electrical Connections

Connector（cable）	RS485	Relay(NO)
Red (Pin1)	V+	V+
Black (Pin2)	V-	V-
Yellow (Pin3)	RS485A	R1
Green (Pin4)	RS485B	R2

5. Dimensions

6. Installation

Mounting plate　　　Rain and Snow Sensor　　　Installation and fixation

The angle between sensor and horizontal level should be about 15°

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 Rain or snow

Host Scan Order(slave address:0x01)
01 03 00 00 00 01 840A

Slave Response
01 03 02 00 0A 3843

(000A)H>> no rain or snow，(000B)H>> rain or snow

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

Host Scan Order (Changed the 01H to 02H):
01 06 00 00 00 02 080B

Slave Response:
01 06 00 00 00 02 080B

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: