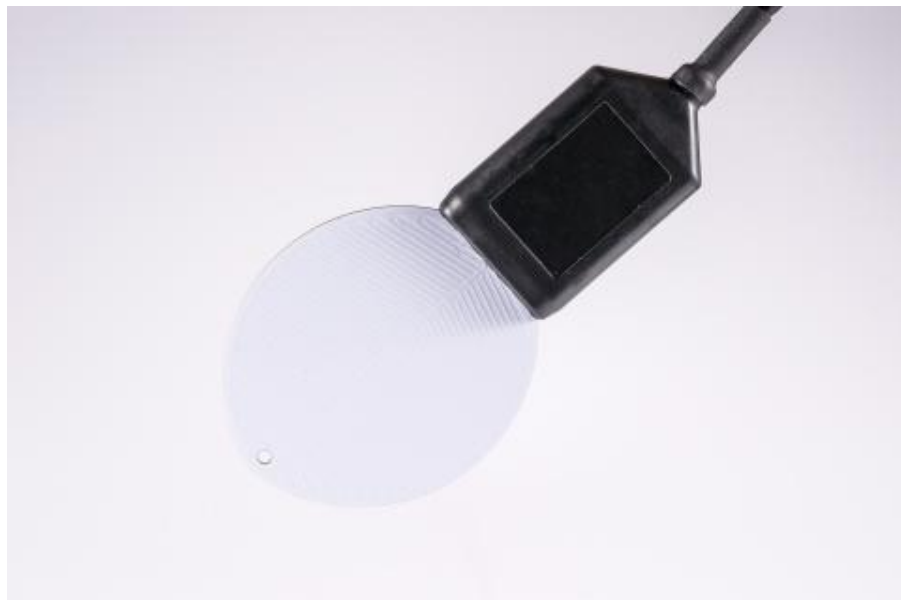# LEAF HUMIDITY SENSOR

RY-CYM/485

MANUAL

INTRODUCTION & PRINCIPLE

When the leaf surface has a certain amount of water vapor, the leaf surface is easily infected by some fungal and bacterial diseases. The foliar humidity sensor can measure the presence and duration of foliar humidity, so that researchers or producers can predict the occurrence of diseases and take relevant protective measures for plants or crops.

The leaf surface temperature and humidity sensor can accurately measure the leaf surface humidity, and can detect the trace moisture or ice crystal residue on the leaf surface. The shape of the sensor is imitation blade design, which truly simulates the characteristics of the page, so it can more accurately reflect the condition of the leaf surface environment. It measures the presence of water or ice by changing the dielectric constant of the upper surface of the blade medium. Low power consumption for long-term continuous monitoring.

It is easy to install and can be hung on the greenhouse or the mast of a weather station.

TECHNICAL SPECIFICATION

◆Measuring range：Leaf temperature -20~80℃　　Leaf humidity 0~100%

◆Respond time：＜1s

◆Accuracy：±1℃（25℃）；±5%（25℃）

◆Output signal：RS485modbus

◆Working voltage：DC9~24V

◆Working current：17ma（DC12V）

◆Power Consumption：DC12V <=0.22W

◆Standard line length：1.5 米

◆Stability time: about 10 seconds after power on

◆Output lead: Recommended <500m

◆Ingress Protection：IP65

COMMUNICATION PROTOCOL

Sensor default station number: 0xFF

Baud rate：9600

Data bit：8

Stop bit：1

Check bit：None

Flow control：None

Read station number command (fixed command)

Device address　Function code　Start register address　No. of registers CRC check

00　03　0001　0001　　　CRCloCRChi

Respond

Device address　Function code　Data length　Data　CRC check

　00 03 02 00xx　　　CRCloCRChi（XX=01-ff）

Example

Read station number

Command 00 03 00 01 00 01 D4 1B

Respond 00 03 02 00 FF C5 C4

Write station number：

Device address Function code Start register address No. of registers Data length Data(new station number) CRC check

00 10 0001 0001 02　00xx CRCloCRChi（XX=0X01-0XFF）

Respond

Device address	Function code	Start register address	No. of registers	CRC check
00	10	0001	0001	CRCloCRChi

Example

Command 00 10 00 01 00 01 02 00 33 EA 04

Respond 00 10 00 01 00 01 51 D8

Read data command (single leaf humidity type)

Host sends command format:

Device address	Function code	Start register address	No. of registers	CRC check
xx	03	0000	0001	CRCloCRChi

Slave response command format:

Device address	Function code	Data length	Data	CRC check
xx	03	02	00yy	CRCloCRChi

Example：

Command：FF 03 00 00 00 01 91 D4

Respond：FF 03 02 00 11 51 9C

Leaf humidity = 00 11　= 17/10 = 1.7　%

Read data command (Leaf temperature and humidity type)

Host sends command format:

Device address	Function code	Start register address	No. of registers	CRC check
xx	03	0000	0002	CRCloCRChi

Slave response command format:

Device address	Function code	Data length	Data	CRC check
xx	03	04	00yy	CRCloCRChi

Example：

Command：FF 03 00 00 00 02 D1 D5

Respond：FF 03 04 00 11 0E BA 30 2A

Leaf humidity = 00 11　= 17/10 = 1.7　%

Leaf temperature = 0E BA　= 3770/100-20 = 17.7℃

WIRING METHOD

output sensor is equipped with a 1.5m four core cable as standard. The cable specification is 0.2mm² Four core shielded cable. The wiring color is defined as:

RS485	
Red	Positive pole
Black	Negative pole
Yellow	A
Blue	B

WARRANTY & SERVICE

Warranty commitment: the warranty period is 12 months from the delivery period (except for the product problems caused by the failure to operate according to the corresponding technical requirements or other human behaviors).

After sales commitment: users can consult relevant technical problems by phone and get clear solutions. If it is a quality problem, it can be returned to the factory for maintenance or replacement.

Service Phone：0310-8033736