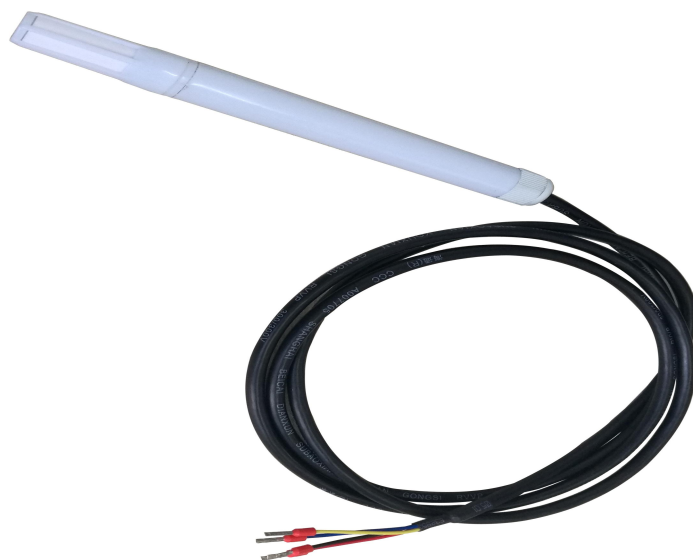# TEMPERATURE & HUMIDITY SENSOR

RY-WS301

MANUAL

INTRODUCTION

RY-WS301 is developed for the measurement of temperature and humidity in outdoor meteorological monitoring system. It has the characteristics of linear response, wide measurement range, high accuracy, etc., and the probe solves the problems of temperature drift and temperature compensation.

FEATURES

●Sensitive element with imported integrated

●Standard current and voltage signal output, optional temperature measurement range, single wet product

●Universal, hand-held design, easy to use

●special filter tube, excellent waterproof and dustproof

●Strong resistance to condensation , suitable for long-term operation in high humidity environment

●Fast response time, excellent long-term stability

●The external sensor can effectively reduce the influence of the self heating of the transmission circuit

APPLICATION

It is widely used in outdoor, communication room, intelligent building, subway, shopping mall, library and other places, especially in the field of precise measurement and control of temperature requirements. The sensor shell is professionally customized with mould dust-proof and waterproof, and the outdoor application is equipped with shutter box.

COMMUNICATION PROTOCOL

Communication specification

9600,N,8,1

Write station number：

Command format: Device address Function code Start register address

No. of registers Data length   Data CRC check

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

Write register response

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

  xx 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 station number command (fixed command)

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

00   03   0001   0001   CRCloCRChi

Station 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

Read Date

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

xx　03　0000　0002　　　CRCloCRChi

Data respond

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 16 76 0D FF 44 BE

Temperature：4th, 5th 16 76

Temperature=16 76=5750/100-40= 17.5℃

Humidity：6th ,7th

Humidity=0D FF =3583/100=35.83%

ABS engineering plastics with light shutter box for outdoor type

TECHNICAL SPECIFICATION

●Measuring range：-40-60℃　　0-100%RH

●Accuracy：≦±0.3℃(@25℃，typical）

　　　≦±3%RH（@25℃，20%-80%RH，typical）

●Long-Term Stability：＜0.5℃/year　＜3%RH/year

●Respond time：＜15S　　＜12S（63%）

●Outpur signal：

RY-WS301/V	RY-WS301/S	RY-WS301/485
0-10V	4-20mA	RS485485

●Supply power：DC9-24V

●Work temperature：-40-60℃

●Storage condition：-40-80℃（non-condensation）

●Work current：DC12V ＜20ma(485)；DC12V ＜45ma(current)

●Power Consumption：　DC12V ＜0.24W (485)；DC12V ＜0.54W (current)

●Ingress Protection: IP65

●Cable length：3m（customizable）

●Farthest lead wire：Current200m、　RS485 100 m、voltage 50m
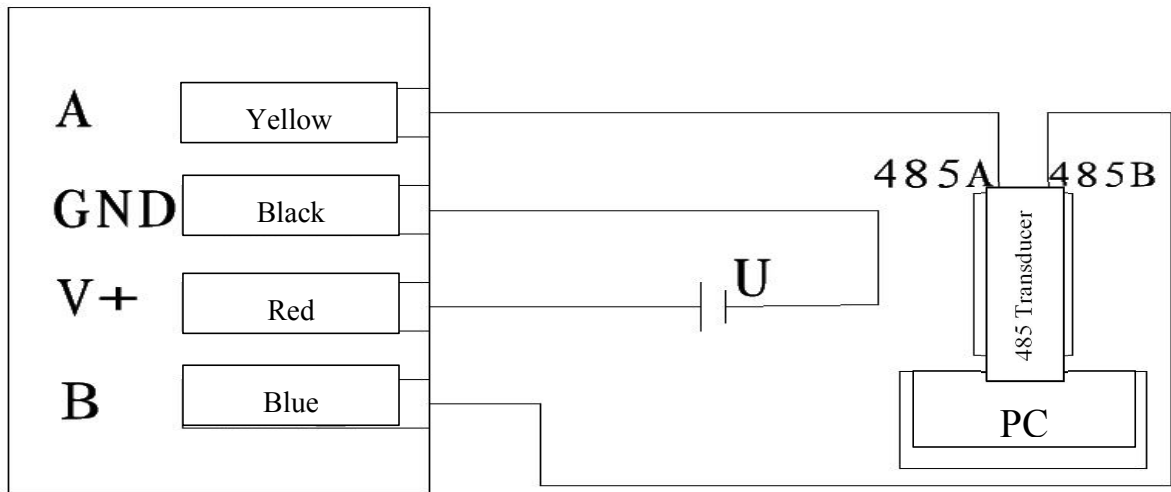
●Shell material：ABS

●Weight：＜100g

STRUCTURE (mm)

WIRING METHOD

RH — Blue
GND — Black
V+ — Red
T — Yellow

R_R A U A R_R
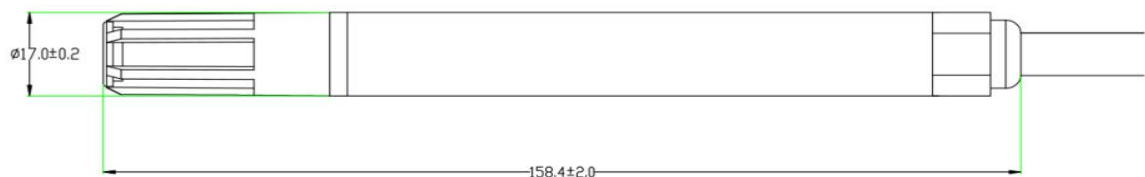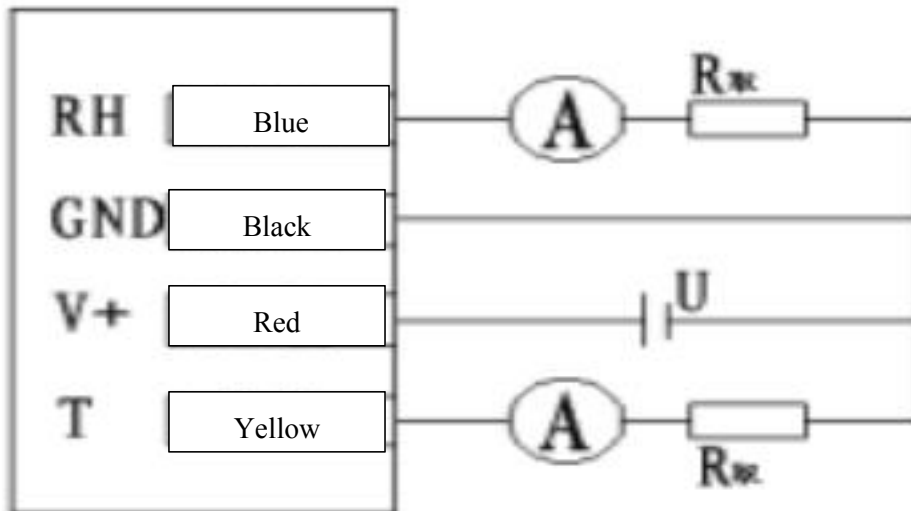
three-wire current to measure temperature and humidity

RH — Blue
GND — Black
V+ — Red
T — Yellow

V R_L U R_L V
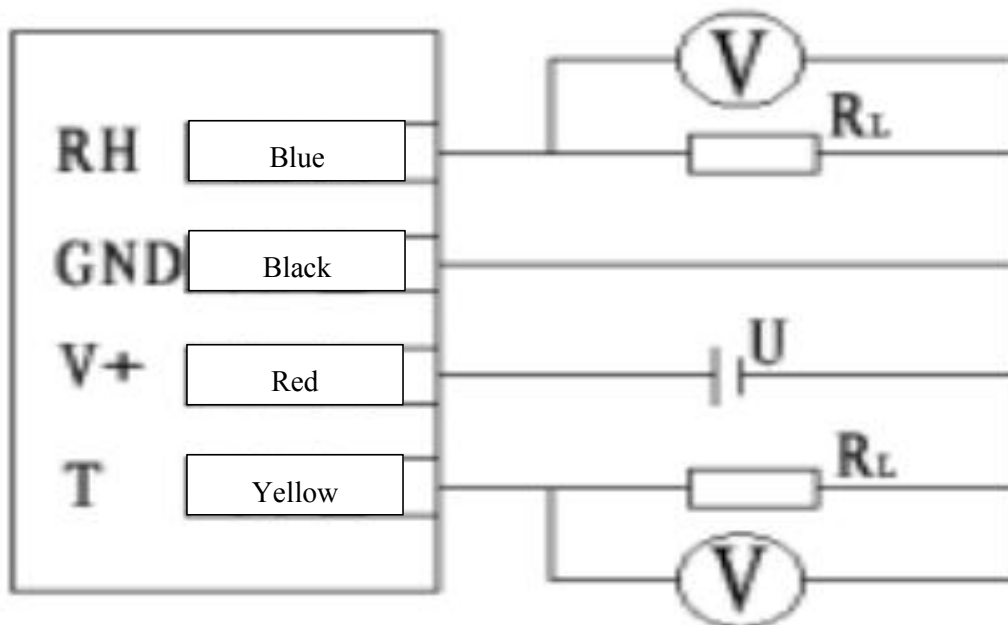
three-wire voltage to measure temperature and humidity

485 communicatino connect	

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