# SM5388M

# 4-20MA outdoor aluminum wind speed and direction integrated sensor

## User Manual

File Version: V22.2.22

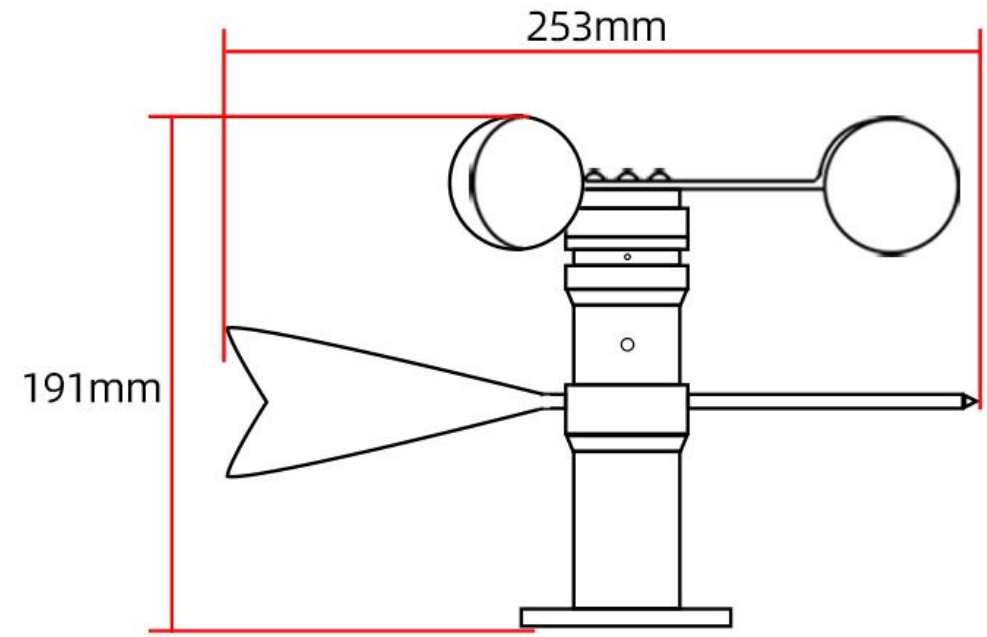
SM5388M using the standard DC4-20mA current output signal,easy access to PLC， DCS and other instruments or systems for monitoring wind speed,conductivity state quantities.The internal use of high-precision sensing core and related devices to ensure high reliability and excellent long-term

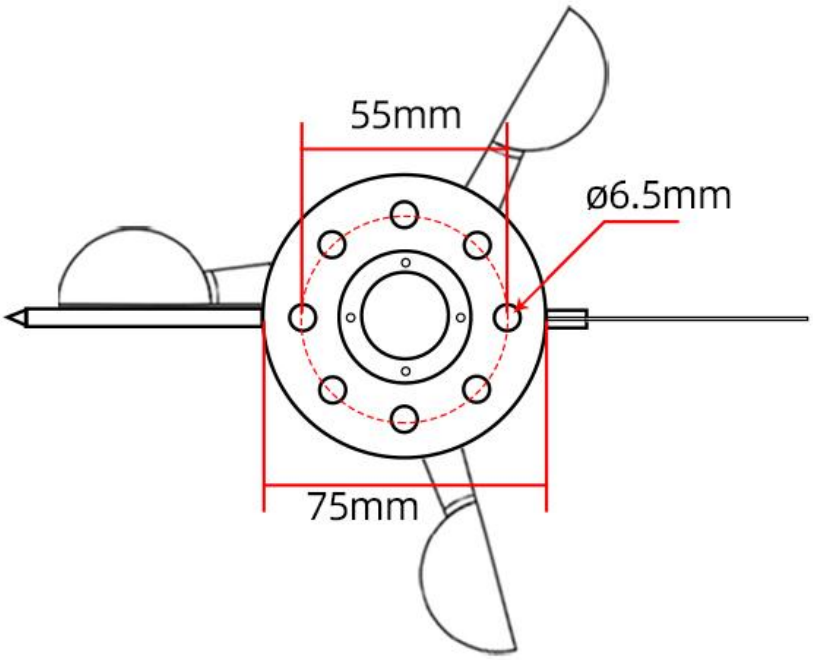
stability,can be customized RS232,RS485,CAN,4-20mA,DC0~5V\10V,ZIGBEE,Lora,WIFI,GPRS and other output methods.

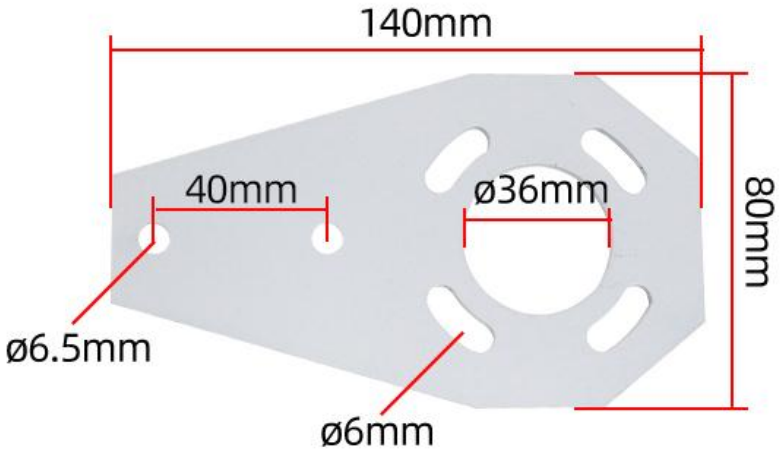
## Technical Parameters

| Technical parameter | Parameter value |
|---|---|
| Brand | SONBEST |
| Wind speed range | 0~30m/s |
| Start wind | 0.2m/s |
| Wind speed accuracy | ±3% |
| Shell material | aluminum |
| Wind direction range | 0~360° |
| Wind direction resolution | 22.5° |
| Communication Interface | DC4~20mA |
| Power | DC12~24V 1A |
| Running temperature | -40~80°C |

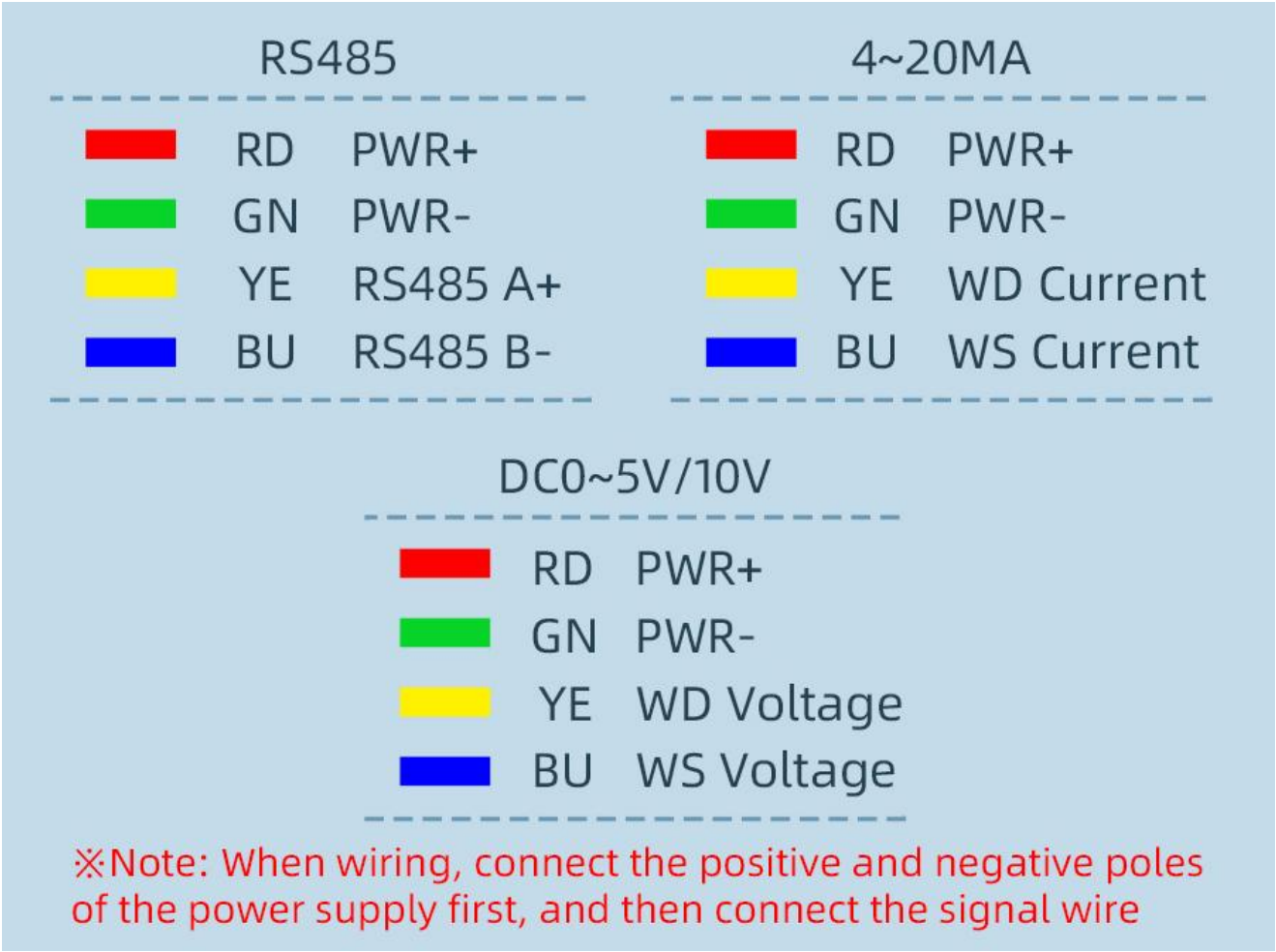
## Product Size


253mm
191mm


55mm
ø6.5mm
75mm

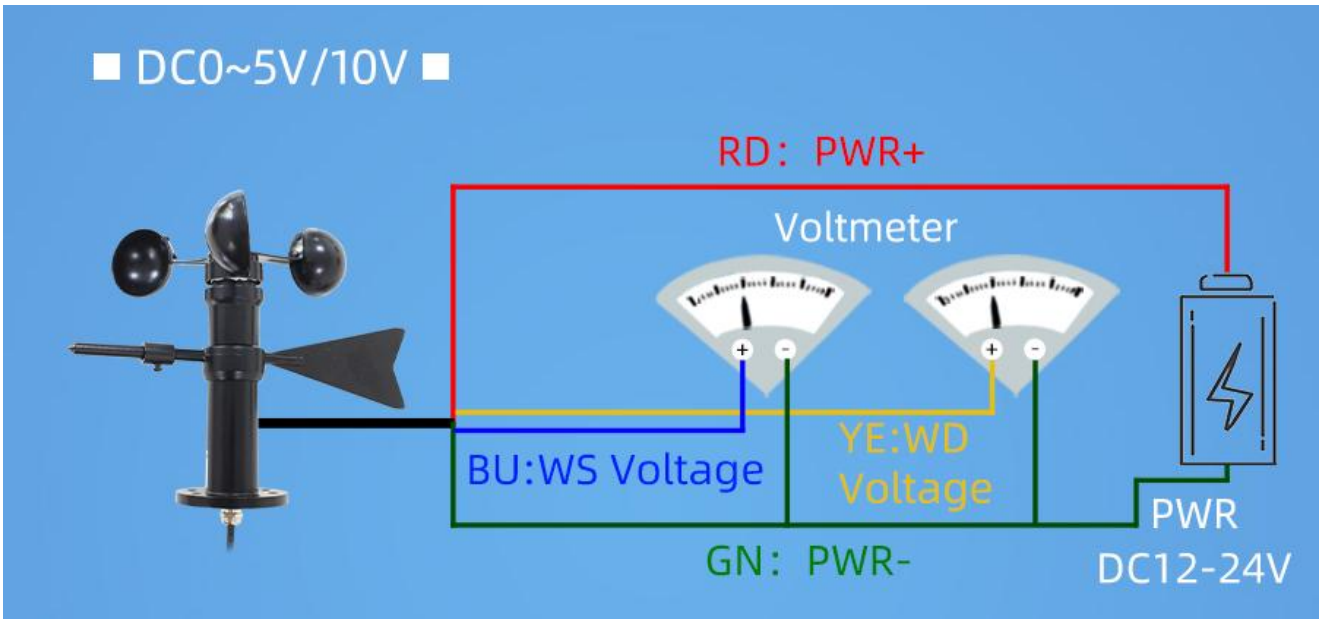


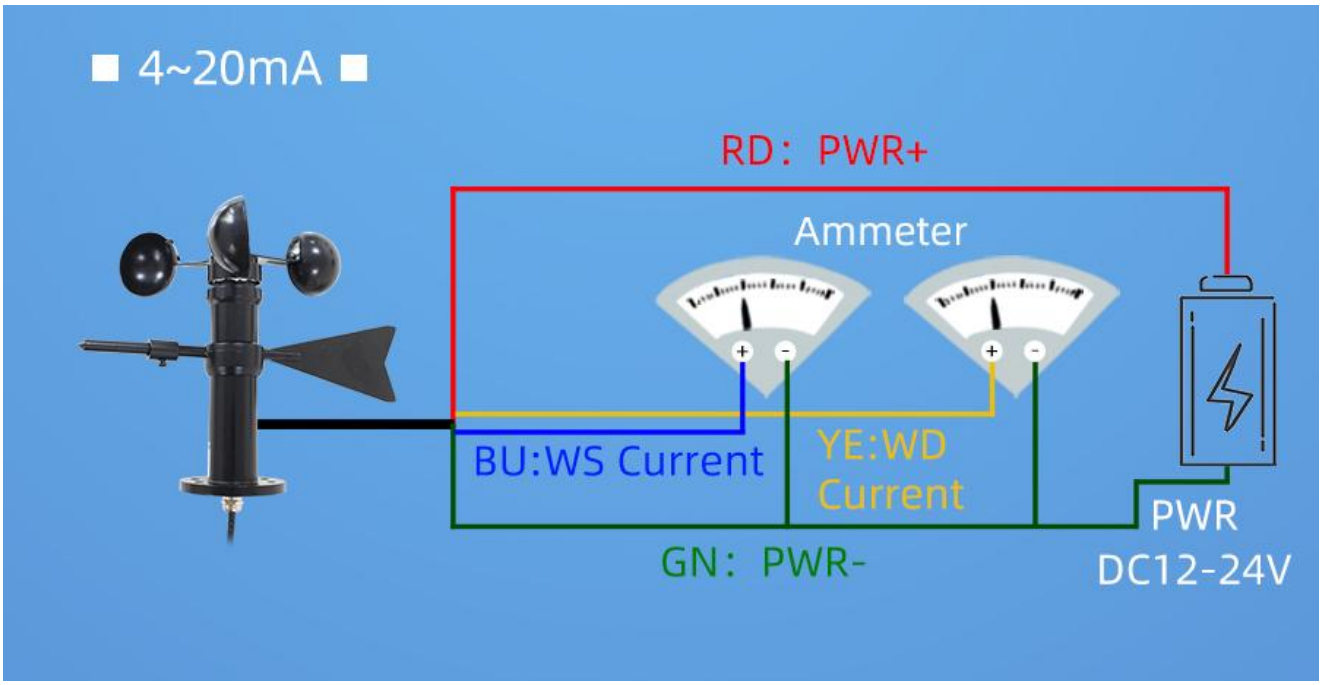

**How to wiring?**



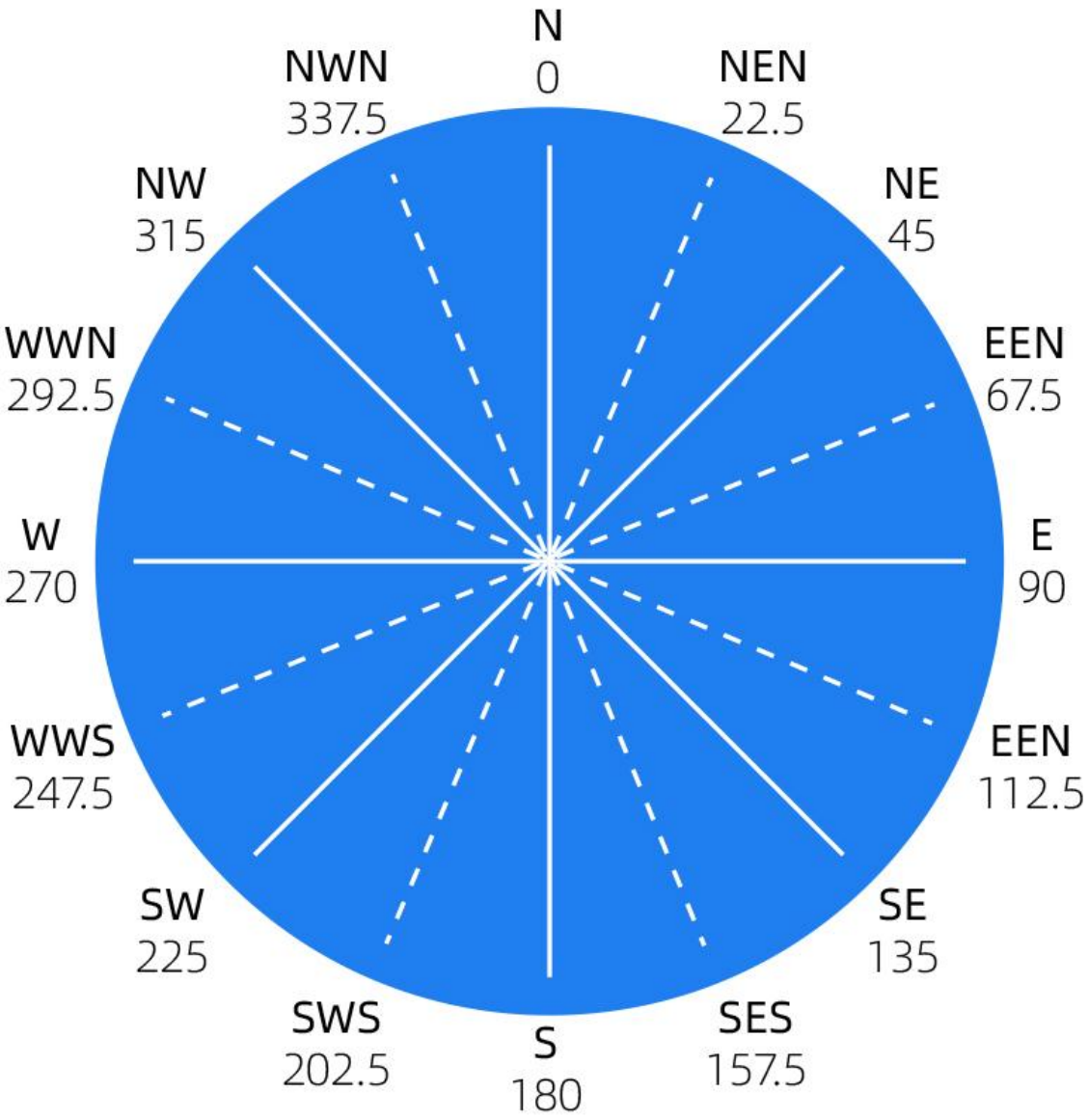

**Application solution**


■ RS485 ■
RS485 Conversion
Computer


■ DC0~5V/10V ■
RD: PWR+
Voltmeter
BU:WS Voltage
YE:WD Voltage
GN: PWR-
PWR
DC12-24V


■ 4~20mA ■
RD: PWR+
Ammeter
BU:WS Current
YE:WD Current
GN: PWR-
PWR
DC12-24V

# 16-DIMENSIONAL MAP OF WIND DIRECTION




**How to use?**

## 1. wind speed and current computing relationship

For example, the range is 0~30m/s, the analog output is 4~20mA current signal, wind speed and current The calculation relationship is as shown in the formula: C = (A2-A1) * (X-B1) / (B2-B1) + A1, where A2 is wind speed range upper limit, A1 is the lower limit of the range, B2 is current output range upper limit, B1 is the lower limit, X is the currently read wind speed value, and C is the calculated current value. The list of commonly used values is as follows:

| current(mA) | wind speedValue (m/s) | Calculation Process |
|---|---|---|
| 4 | 0.0 | (30-0)*(4-4)÷(20-4)+0 |
| 5 | 1.9 | (30-0)*(5-4)÷(20-4)+0 |
| 6 | 3.8 | (30-0)*(6-4)÷(20-4)+0 |
| 7 | 5.6 | (30-0)*(7-4)÷(20-4)+0 |
| 8 | 7.5 | (30-0)*(8-4)÷(20-4)+0 |
| 9 | 9.4 | (30-0)*(9-4)÷(20-4)+0 |
| 10 | 11.3 | (30-0)*(10-4)÷(20-4)+0 |
| 11 | 13.1 | (30-0)*(11-4)÷(20-4)+0 |
| 12 | 15.0 | (30-0)*(12-4)÷(20-4)+0 |
| 13 | 16.9 | (30-0)*(13-4)÷(20-4)+0 |
| 14 | 18.8 | (30-0)*(14-4)÷(20-4)+0 |
| 15 | 20.6 | (30-0)*(15-4)÷(20-4)+0 |
| 16 | 22.5 | (30-0)*(16-4)÷(20-4)+0 |
| 17 | 24.4 | (30-0)*(17-4)÷(20-4)+0 |
| 18 | 26.3 | (30-0)*(18-4)÷(20-4)+0 |
| 19 | 28.1 | (30-0)*(19-4)÷(20-4)+0 |
| 20 | 30.0 | (30-0)*(20-4)÷(20-4)+0 |

As shown in the above formula, when measuring 8mA, current current is 11.5m/s。

## 2. conductivity and current computing relationship

For example, the range is 0~360°, the analog output is 4~20mA current signal, conductivity and

current The calculation relationship is as shown in the formula: C = (A2-A1) * (X-B1) / (B2-B1) + A1, where A2 is conductivity range upper limit, A1 is the lower limit of the range, B2 is current output range upper limit, B1 is the lower limit, X is the currently read conductivity value, and C is the calculated current value. The list of commonly used values is as follows:

| current(mA) | conductivityValue (°) | Calculation Process |
|---|---|---|
| 4 | 0.0 | (360-0)*(4-4)÷(20-4)+0 |
| 5 | 22.5 | (360-0)*(5-4)÷(20-4)+0 |
| 6 | 45.0 | (360-0)*(6-4)÷(20-4)+0 |
| 7 | 67.5 | (360-0)*(7-4)÷(20-4)+0 |
| 8 | 90.0 | (360-0)*(8-4)÷(20-4)+0 |
| 9 | 112.5 | (360-0)*(9-4)÷(20-4)+0 |
| 10 | 135.0 | (360-0)*(10-4)÷(20-4)+0 |
| 11 | 157.5 | (360-0)*(11-4)÷(20-4)+0 |
| 12 | 180.0 | (360-0)*(12-4)÷(20-4)+0 |
| 13 | 202.5 | (360-0)*(13-4)÷(20-4)+0 |
| 14 | 225.0 | (360-0)*(14-4)÷(20-4)+0 |
| 15 | 247.5 | (360-0)*(15-4)÷(20-4)+0 |
| 16 | 270.0 | (360-0)*(16-4)÷(20-4)+0 |
| 17 | 292.5 | (360-0)*(17-4)÷(20-4)+0 |
| 18 | 315.0 | (360-0)*(18-4)÷(20-4)+0 |
| 19 | 337.5 | (360-0)*(19-4)÷(20-4)+0 |
| 20 | 360.0 | (360-0)*(20-4)÷(20-4)+0 |

As shown in the above formula, when measuring 8mA, current current is 94° 。

## Disclaimer

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