



RK120-03 Ultrasonic Wind Speed & Direction Sensor



Overview

RK120-03 is a measuring instrument that uses the time difference of ultrasonic propagation in air to measure wind speed, direction and acoustic temperature. The built-in signal processing unit can output corresponding signals according to user needs, with a lightweight and compact structure, no moving parts and a high-strength structural design that can accurately detect in harsh weather conditions, making the components precise and stable, easy to maintain and using open communication protocols. It can be widely applied in fields such as meteorology, oceanography, environment, airports, ports, laboratories, industry and agriculture, transportation and other fields.

Features

- No moving parts, zero wear and tear
- Maintenance free, long service life
- ASA shell, more lightweight
- Adopting ultrasonic probe reflection type, the structure is more compact
- Probe heating, strong anti freezing ability
- Adopting acoustic phase compensation technology and random error identification technology to make the output smoother and more accurate
- Digital filtering technology with stronger resistance to electromagnetic interference
- Optional electronic compass, electromagnetic shielding and other functions

Applications

- Environmental monitoring
- Sea-going vessel
- Bridge & tunnel
- Solar and wind power generation
- Wind resource assessment
- Drilling platform
- Automatic weather station
- Agriculture

Technical Parameter

| Item | Wind speed | Wind direction | Atmospheric pressure |
|--------------------|---|----------------|----------------------|
| Range | 0-45m/s,0-60m/s,0-80m/s (extended range, not standard) | 0-360° | 300-1100hPa |
| Resolution | 0.01m/s | 1° | 0.1hPa |
| Accuracy | ≤10m/s:±0.2m/s >10m/s:<±2% the current value | ±3° | ±1 hPa |
| Starting threshold | 0.1m/s | 0.1m/s | / |
| Power supply | 12-24VDC | | |
| Power consumption | 0.12W(normal mode), 0.008W(sleep mode), 1.8W(heating mode) | | |
| Output signal | RS485(Modbus-Rtu/NMEA-0183)/RS232/SDI-12 4-20mA/0-5V(only for wind speed & direction optional) | | |



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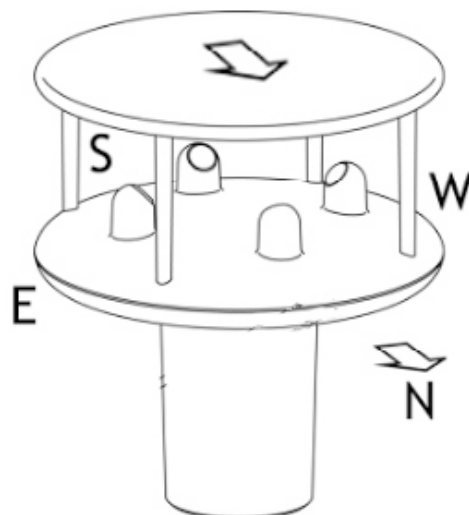
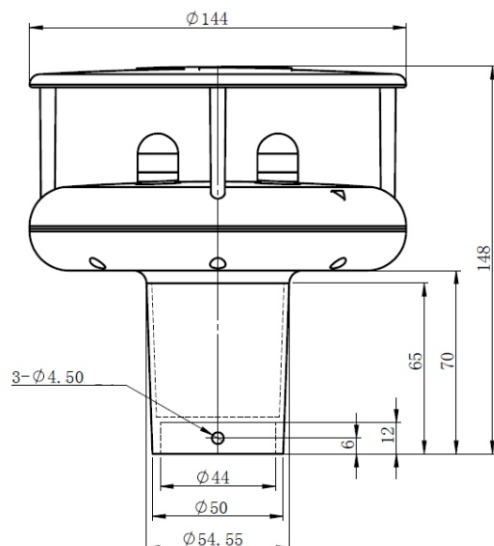
Technical Parameter

| Item | Wind speed | Wind direction | Atmospheric pressure |
|-----------------------|------------|----------------------------|----------------------|
| Baud rate | | 4800-19200 | |
| Data update cycle | | 1s(default),other optional | |
| Operating temperature | | -40℃-+70℃ | |
| Storage temperature | | -40℃-+80℃ | |
| Working humidity | | 0 - 100% | |
| Ingress protection | | IP66 | |
| Electronic compass | | optional | |
| Atmospheric pressure | | optional | |
| Dimension | | Φ144*148mm | |
| Weight(unpacked) | | 0.8kg | |
| Main material | | ASA | |

Dimension&Mounting

The sensor has a rotatable installation hole at the bottom,
When installing the sensor, ensure that the indicator arrow on the sensor is facing towards the geographic north.

Unit:mm





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Parameter Selection Table

| Remark | Series | Type | Parameter | Supply | Output | Cable length | |
|--------|--------|------|-----------|--------|--------|--------------|--|
| RK | | | | | | | |
| | 120 | | | | | | |
| | | 03 | | | | | |
| | | | A | | | | Without compass & atmospheric pressure |
| | | | B | | | | With electronic compass |
| | | | C | | | | With atmospheric pressure |
| | | | D | | | | With electronic compass & atmospheric pressure |
| | | | | A | | | 12-24V |
| | | | | X | | | Other |
| | | | | | A | | 4-20mA |
| | | | | | B | | 0-5V |
| | | | | | C | | RS485(Modbus) |
| | | | | | D | | RS485(NMEA-183) |
| | | | | | E | | RS232(Modbus) |
| | | | | | F | | RS232(NMEA-183) |
| | | | | | G | | SDI-12 |
| | | | | | | 4000 | 4m,default |
| | | | | | | 10000 | 10m |
| | | | | | | ... | |

Example: RK120-03AAC4000 Without compass & atmospheric pressure,Supply:12-24V, Output:RS485,Cable length:4m.

| Revision time | Reviser | Current Version | Remarks |
|---------------|---------|-----------------|---------|
| 20250329 | Lee | V5.0 | |