

RK900-01 Automatic Weather Station

RK900-01 Automatic Weather Station is used for atmospheric temperature, relative humidity, atmospheric pressure, wind speed & direction, solar radiation, light, rainfall, soil temperature and humidity parameters measurement. The station consists of various types of sensors LCD screen, meteorological data collector, chassis, support and other parts. It can be widely used in meteorology, hydrology, agriculture, forestry, scientific research and other fields.

FEATURES

- High accuracy
- Strong resistance to harsh environment
- Strong corrosion resistant ability
- Automatic storage and backup
- Convenient data download
- All-metal construction of bracket
- Solar power supply optional
- Free PC software



PARTS	Details	Note
Data logger	Meteorological data collection, display, storage and communications	
Sensors & cable	Wind speed sensor, wind direction sensor, atmospheric temperature, atmospheric humidity, atmospheric pressure, rainfall, solar radiation, soil temperature, soil moisture, etc. (Optional according to user's requirements)	
Meteorological monitoring software	Use to real-time display, analysis and storage data on the PC	Attached
Multi-plate radiation shield	Used to install the atmospheric temperature atmospheric humidity and atmospheric pressure sensors	
Tripod & accessories	Height: 2.5m typ., 304SS or 10m(4m+3m+3m) steel with coating is optional other height is optional	
Protective box	Used to install data logger, solar charge controller and battery, stainless steel or steel with coating	
110VAC/220VAC adapter	Optional when using AC power supply	
RS232 cable	2m	
RS485 cable	2m	
USB to RS232 converter	Used to connect PC without RS232 serial port	
RS232-RS485 converter	Signal Conversion for RS485 and RS232	
U disk	Used for data storage	optional
GPS module	Used for wireless data transmission, need to match with the local mobile communication network	optional
WiFi module	Used for wireless data transmission, need for wireless network	optional
Ethernet module	Used for wireless data transmission, need for cable network	optional
LED screen	Size and display content can be customized	optional
Solar power supply system	Include photovoltaic panels(50W), solar charge controller, 25AH battery(Can't be transported by air. Suggest users to bring their own)	optional
Lightning protection device	Contain the lightning rod connecting wires and grounding angle steel	optional
Windbreak wire	Used for fixing 10m support rod	optional
Base fixed steel cage	Used for fixing 10m support rod	optional

TYPICAL APPLICATION & TECHNICAL SPECIFICATION

General weather station

MEASURE ITEM	Measure range	Resolution	Accuracy
Wind speed	0-45m/s	0.1m/s	±(0.3±0.03)/m/s
Wind direction	0-360°	1°	±3°
Atmospheric temperature	-40~+60°C	0.1°C	±0.5°C
Atmospheric humidity	0-100%RH	0.1%RH	±3%
Atmospheric pressure	10-1100hPa	0.1hpa	±0.3hPa
Rainfall	0-8mm/min	0.2mm	±4%
Solar radiation	0-2000W/m2	1W/m2	±5%

Photovoltaic power generation weather station

MEASURE ITEM	Measure range	Resolution	Accuracy
Wind speed	0-45m/s	0.1m/s	±(0.3±0.03)/m/s
Wind direction	0-360°	1°	±3°
Atmospheric temperature	-40~+60°C	0.1°C	±0.5°C
Atmospheric humidity	0-100%RH	0.1%RH	±3%
Atmospheric pressure	10-1100hPa	0.1hpa	±0.3hPa
Photovoltaic panel temperature sensor	-50~+100°C	0.1°C	±0.5°C
Total solar radiation	0-2000W/m2	1W/m2	±4%
Rainfall(optional)	0-8mm/min	0.2mm	±4%
Hall current sensor(optional)	0-50V	1V	±0.5%
Hall voltage sensor(optional)	0-15VA	0.1A	±0.5%

Agricultural weather station

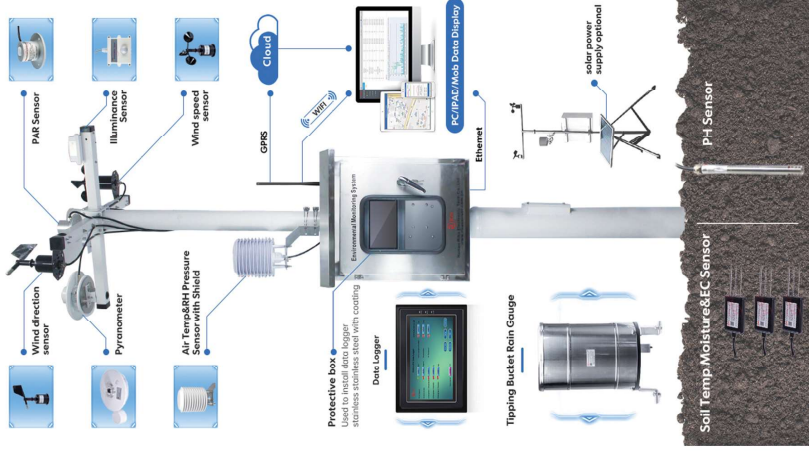
MEASURE ITEM	Measure range	Resolution	Accuracy
Wind speed	0-45m/s	0.1m/s	±(0.3±0.03)/m/s
Wind direction	0-360°	1°	±3°
Atmospheric temperature	-40~+60°C	0.1°C	±0.5°C
Atmospheric humidity	0-100%RH	0.1%RH	±3%
Atmospheric pressure	10-1100hPa	0.1hpa	±0.3hPa
Solar radiation	0-2000W/m2	1W/m2	±5%
PAR sensor	0-2500µmol·m ⁻² ·s ⁻¹	1µmol·m ⁻² ·s ⁻¹	±1%
Rainfall	0-8mm/min	0.2mm	±4%
Soil temperature	-30~+70°C	0.1°C	±0.5°C
Soil moisture	0-100%	1%	±3%
CO2(optional)	0-5000ppm	1ppm	±3%
Soil PH(optional)	0-14PH	0.1PH	±0.1PH
Soil salinity(optional)	0-15000mg/L	1mg/L	±5%
Soil EC(optional)	0-20ms/cm	0.1ms/cm	±5%

Scenic area weather station

MEASURE ITEM	Measure range	Resolution	Accuracy
Wind speed	0-45m/s	0.1m/s	±(0.3±0.03)/m/s
Wind direction	0-360°	1°	±3°
Atmospheric temperature	-40~+60°C	0.1°C	±0.5°C
Atmospheric humidity	0-100%RH	0.1%RH	±3%
Atmospheric pressure	10-1100hPa	0.1hpa	±0.3hPa
Rainfall	0-8mm/min	0.2mm	±4%
Uv radiation	0-2000W/m2	1W/m2	±5%
Ground temperature	-30~+70°C	0.1°C	±0.5°C

Notice:

- 1.The measurement items can be increased or deleted in the table;
- 2.Measured data is automatically recorded and stored for download analysis;
- 3.If there are other functional requirements, we can provide customized solutions.



Greenhouse comprehensive monitoring station

MEASURE ITEM	Measure range	Resolution	Accuracy
Atmospheric temperature	-40~+60°C	0.1°C	±0.5°C
Atmospheric humidity	0-100%RH	0.1%RH	±3%
Atmospheric pressure	10-1100hPa	0.1hpa	±0.3hPa
CO2	0-5000ppm	1ppm	±3%
Illuminance	0-20000lux	1lux	±7%
Soil temperature	-30~+70°C	0.1°C	±0.5°C
Soil moisture	0-100%	1%	±3%
Solar radiation(optional)	0-2000W/m2	1W/m2	±5%
PAR sensor(optional)	0-2500µmol·m ⁻² ·s ⁻¹	1µmol·m ⁻² ·s ⁻¹	±1%
Soil PH(optional)	0-14PH	0.1PH	±0.1PH
Soil salinity(optional)	0-15000mg/L	1mg/L	±5%
Soil EC(optional)	0-20ms/cm	0.0ms/cm	±5%

RK900-03 Portable Weather Station

RK900-03 Portable Weather Station is a high-integrated mini weather station of micro-power consumption, equipped with a lightweight telescopic tripod for rapid installation. Its functions as : short-term meteorological observations; chronically continuously monitoring small weather station and adaptable for mobile real-time data collector. Five sensors are included, such as wind direction, wind speed, barometric pressure, temperature, humidity sensor (others can be customized). The test data can be transmitted to a fixed meteorological data center or vehicle mobile center system via RS232, RS485, USB or GPRS wireless communications.

FEATURES

High accuracy
Strong resistance to harsh environment
Low power consumption
Aluminum alloy frame, one-hand carry, rapid set up in 10s
Additional sensors can be customized
Being equipped with lithium battery and various power supply interfaces
Variety of communication mode for option



MEASURE ITEM	Measure range	Resolution	Accuracy
Wind speed	0-45m/s	0.1m/s	± (0.3±0.03V) m/s
Wind direction	0-360°	1°	±3°
Atmospheric temperature	-50 +100°C	0.1°C	±0.5°C
Atmospheric humidity	0-100%RH	0.1%RH	±3%
Atmospheric pressure	10-1100hPa	0.1hpa	±0.3hPa
ITEM	Specification		
Storage capacity	4M,if stored hourly, you can store data for one month		
Meteorological monitoring software(for free)	Use to real-time display, analysis and storage data on the PC		
Communication mode	Default R232,RS485 & GPRS is optional		
Supply	Recharged 4.8 AH lithium battery or ac adapter(ACT100-240V) or 12DC		
Power consumption	<1W/		
Electronic compass(optional)	With electronic compass when installation does not need to manually to the north		
Portable aluminum alloy instrument box(optional)	600*200*500mm		
Installation	The AWS can complete the installation within 1 minute		
Ingress protection	IP65		
Operating temperature	-40°C +70°C		
Dimension	1375 mm(Shrinkage at 1155 mm,Height can be customized.)		
Weight(unpacked)	5kg		



RK900-09 Miniature Ultrasonic Automatic Weather Instrument

RK900-09 miniature ultrasonic weather station is a fully digital detection, high-precision sensor, which is integrated by the principle of ultrasonic wind speed and direction sensor, high-precision digital temperature, humidity, pressure sensor, can accurately and quickly detect wind speed, wind direction, atmospheric temperature, atmospheric humidity and Atmospheric pressure, built-in signal processing unit can output corresponding signals according to user needs, high-strength structure design can work reliably in harsh climate environment, can be widely used in meteorology, ocean, environment, airport, port, laboratory, industry, agriculture and transportation, etc.



FEATURES

High accuracy,fast response
Easy to install, all-weather measurement
RS485 output
High-strength structural design

MEASURE ITEM	Principle	Range	Resolution	Accuracy
Wind speed	Ultrasonic	0-40m/s	0.1m/s	± (0.3±0.03V) m/s
Wind direction	Ultrasonic	0-359°	1°	±3°
Atmospheric temperature	MEMS	-40 +100°C	0.1°C	±0.5°C
Atmospheric humidity	MEMS	0-100%RH	0.1%RH	±3%
Atmospheric pressure	MEMS	10-1100hPa	0.1hpa	±0.3hPa
ITEM	Specification			
Supply	12-24VDC			
Output	RS485			
Communication Protocol	Modbus-rtu			
Power consumption	0.6W			
Operating temperature	-40 +80°C			
IP Rating	IP65			
Main material	ABS+ Aluminum alloy			

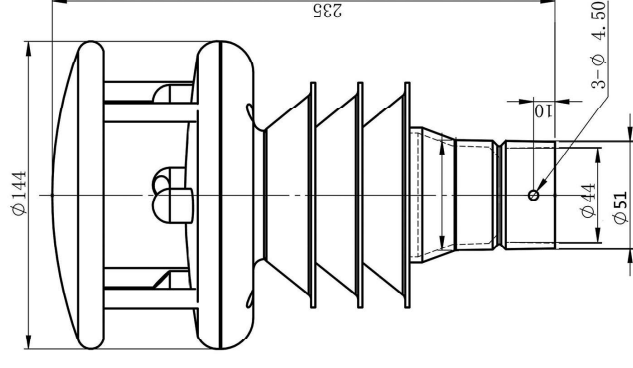


RK900-10 Ultrasonic Automatic Weather Instrument

RK900-10 automatic weather instrument is simultaneously measure the atmospheric temperature, atmospheric humidity, air pressure, wind speed, wind direction, solar radiation, illuminance/UV, dust concentration and precipitation. Temperature, humidity and air pressure sensor is placed within the radiation shield. Wind speed and direction of ultrasonic principle. 245 radar detection on rainfall, which can quickly detect rainfall and rainfall intensity. Internal GPS global positioning module and electronic compass can be mounted to the system to give a good indication of latitude and longitude and relative speed, which can calculate the real and virtual wind speed and direction, and is especially suitable for installation on motion vector, such as special vehicles or vessels, etc.

FEATURES

- High accuracy, fast response
- Easy to install, all-weather measurement
- RS485/RS232/SDI-12 output
- No moving parts, maintenance free
- Built-in heating device to ensure the normal work in cold climate
- Use radar measurement of precipitation, accurately reflect the rainfall and start-stop moment
- Can be added the electronic compass, GPS and BDS global positioning module



ITEM	Specification
Supply	12-24VDC
Output	RS485,RS232,SDI-12
Communication Protocol	Modbus-rtu(cefault),NMEA-0183,SDI-12
Data update cycle	1s(default),other optional
Power consumption	<2W,auto-heating power: 6W
Operating temperature	-40~+80°C
EMC	EN61000-6-3, EN61000-3-3 EN61000-3-2, EN61000-6-1
IP Rating	IP66
Main material	ABS

MEASURE ITEM	Principle	Range	Resolution	Accuracy
Wind speed	Ultrasonic	0-60m/s	0.01m/s	±3%
Wind direction	Ultrasonic	0-360°	1°	±3°
Atmospheric temperature	MEMS	-40~+80°C	0.1°C	±C.3°C
Atmospheric humidity	MEMS	0-100%RH	0.1%RH	±3%
Atmospheric pressure	MEMS	150-1100hPa	0.1hpa	±1hPa
Precipitation(Rain/Hail/Snow)	Radar	0-4mm/min	0.01mm	±0.4mm
Solar radiation	Silicon-cell	0-1750W/m2	1W/m2	±5%
Illuminance	optional Silicon-cell	0-20klux	1lux	±5%
UV	optional Silicon-cell	100-2000μW/cm2	1μW/cm2	±10%
Dust concentration(PM2.5,PM10)	Photoelectric scattering	0-2000μg/m3	1μg/m3	±4%