

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



10m Supporting rod



2.5m Tripod



2.5m Tripod



10m Supporting rod

APPLICATIONS

- Agricultural
- Forestry
- Highways and railways
- Solar or wind power generation
- Greenhouse, breeding
- Scenic region
- Meteorological science research

COMPONENT PARTS

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 Height: 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
GPRS 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 networking	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(60W), solar charge controller, 38AH 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	
Base fixed steel cage	Used for fixing 10m support rod	

Note: 10 m support is recommended for mountainous area or surrounding area with high buildings.

TYPICAL APPLICATION & TECHNICAL SPECIFICATION

● General weather station

Measure item	Measure range	Resolution	Accuracy
Wind speed	0-45m/s	0.1m/s	$\pm (0.3 \pm 0.03V)m/s$
Wind direction	0-360°	1°	$\pm 3^\circ$
Atmospheric temperature	-40-+60°C	0.1°C	$\pm 0.5^\circ C$
Atmospheric humidity	0-100%RH	0.1%RH	$\pm 3\%$
Atmospheric pressure	100-1100hPa	0.1hpa	$\pm 0.3hPa$
Rainfall	0-8mm/min	0.2mm	$\pm 4\%$
Solar radiation	0-2000W/m ²	1W/m ²	$\pm 5\%$

● Photovoltaic power generation weather station

Measure item	Measure range	Resolution	Accuracy
Wind speed	0-45m/s	0.1m/s	$\pm (0.3 \pm 0.03V)m/s$
Wind direction	0-360°	1°	$\pm 3^\circ$
Atmospheric temperature	-40-+60°C	0.1°C	$\pm 0.5^\circ C$
Atmospheric humidity	0-100%RH	0.1%RH	$\pm 3\%$
Atmospheric pressure	100-1100hPa	0.1hpa	$\pm 0.3hPa$
PV temperature sensor	-40-+60°C	0.1°C	$\pm 0.5^\circ C$
Total solar radiation	0-2000W/m ²	1W/m ²	$\pm 3\%$
Rainfall(optional)	0-8mm/min	0.2mm	$\pm 4\%$
Hall current sensor(optional)	0-500V	1V	$\pm 0.5\%$
Hall voltage sensor(optional)	0-150A	0.1A	$\pm 0.5\%$

● Agricultural weather station

Measure item	Measure range	Resolution	Accuracy
Wind speed	0-45m/s	0.1m/s	$\pm (0.3 \pm 0.03V)m/s$
Wind direction	0-360°	1°	$\pm 3^\circ$
Atmospheric temperature	-40-+60°C	0.1°C	$\pm 0.5^\circ C$
Atmospheric humidity	0-100%RH	0.1%RH	$\pm 3\%$
Atmospheric pressure	100-1100hPa	0.1hpa	$\pm 0.3hPa$
Solar radiation	0-2000W/m ²	1W/m ²	$\pm 5\%$
PAR sensor	0-2500 $\mu mol \cdot m^{-2} \cdot s^{-1}$	1 $\mu mol \cdot m^{-2} \cdot s^{-1}$	$\pm 1\%$
Rainfall	0-8mm/min	0.2mm	$\pm 4\%$
Soil temperature	-30-+70°C	0.1°C	$\pm 0.5^\circ C$
Soil moisture	0-100%	1%	$\pm 3\%$

CO ₂ (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%

● 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	100-1100hPa	0.1hpa	±0.3hPa
CO ₂	0-5000ppm	1ppm	±3%
Illuminance	0-200000lux	1lux	±7%
Soil temperature	-30-+70°C	0.1°C	±0.5°C
Soil moisture	0-100%	1%	±3%
Solar radiation(optional)	0-2000W/m ²	1W/m ²	±5%
PAR sensor(optional)	0-250μ*mol*m ⁻² *s ⁻¹	1μ*mol*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	0.01mS/cm	±5%

● Scenic area weather station

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	-40-+60°C	0.1°C	±0.5°C
Atmospheric humidity	0-100%RH	0.1%RH	±3%
Atmospheric pressure	100-1100hPa	0.1hpa	±0.3hPa
Rainfall	0-8mm/min	0.2mm	±4%
UV radiation	0-200W/m ²	1W/m ²	±5%
Ground temperature	-50-+100°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.

DATA LOGGER SPECIFICATION

Item	RK600-07A	RK600-07B
Display	7" color touch screen with backlight	7" color touch screen with backlight
OS	/	Android4.0.3
Screen sleep	Support	Support
Backlight adjustable	Support	Support
Communication status indication	Support	Support
Internal storage	64M(Data stored once every hour for 6 years, once every 10 minutes for 1 year, and once every minute for 3 months.)	64M(Data stored once every hour for 6 years, once every 10 minutes for 1 year, and once every minute for 3 months.)
RIKA cloud	Support, Need GPRS/2G/3G/4G Module	Not support
User cloud	Support, Need GPRS/2G/3G/4G Module	Not support
API	Support, Need GPRS/2G/3G/4G Module	Not support
Remote monitoring	Not support	Support Windows,Mac & Android
Video & photo	Via RIKA cloud	Not support
Sensor connection	Waterproof connector	Waterproof connector
Communication interface	RS485	RS485,Ethernet,GPRS/2G/3G/4G,WIFI
	RJ45 Ethernet(optional)	/
	GPRS/2G/3G/4G(optional)	/
	Lora(optional)	Lora(optional)
	Zigbee (optional)	Zigbee (optional)
Communication protocol	Modbus-RTU	Modbus-RTU, Modbus-TCP
	Modbus-TCP(with Ethernet module)	/
Supply	Solar power,DC12-24V,AC100-240V	Solar power,DC12-24V,AC100-240V
Measurement parameters	32 max, support 16 parameters upload to cloud platform	32 max.
Recording interval	1-240min settable	1-240min settable
U_disk download	Support	Support
Relay output	customized	customized
Average consumption	<3.5W	<3.5W
CPU	ARM Cortex-A8 (600MHZ)	ARM Cortex-A8 (720MHZ)
ESD	Class 4,±8kV	Class 4,±8kV
Operation temperature	-40-+75℃	-40-+75℃
Shock	10-25Hz(X,Y,Z 2g@30min)	10-25Hz(X,Y,Z 2g@30min)
FCC	Class A	Class A
CE	EN55022 & EN55024	EN55022 & EN55024
Protection box	400*500*200mm,support solar power system	400*500*200mm,support solar power system
IP(with protection box)	IP55	IP55

Guidelines for the Selection of Data logger:

If solar power supply is needed, RK600-07 is recommended, data logger, solar controller and battery can be installed in protective box.

DISPLAY INTERFACE

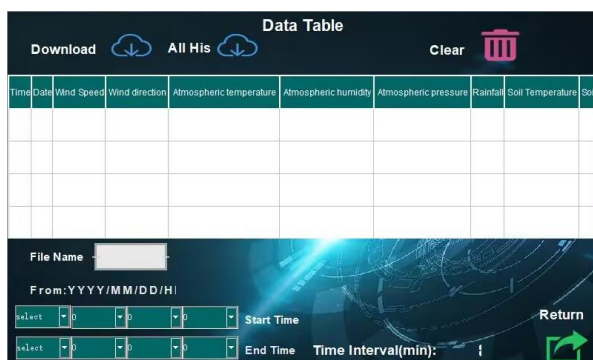
- RK600-07A



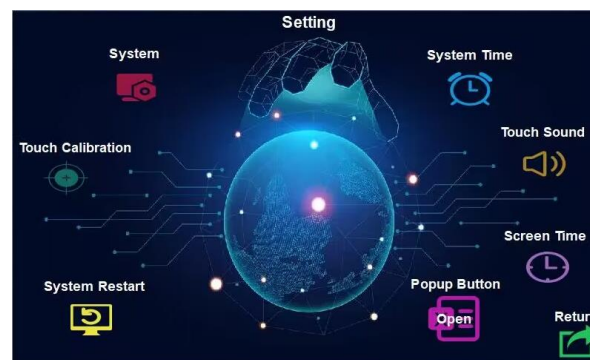
Main Interface



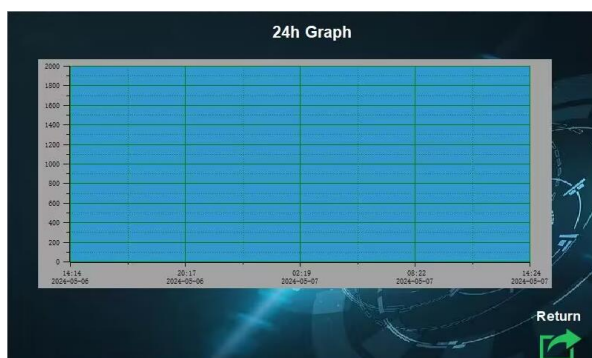
Data Interface



Historical Data Interface



Setting Interface



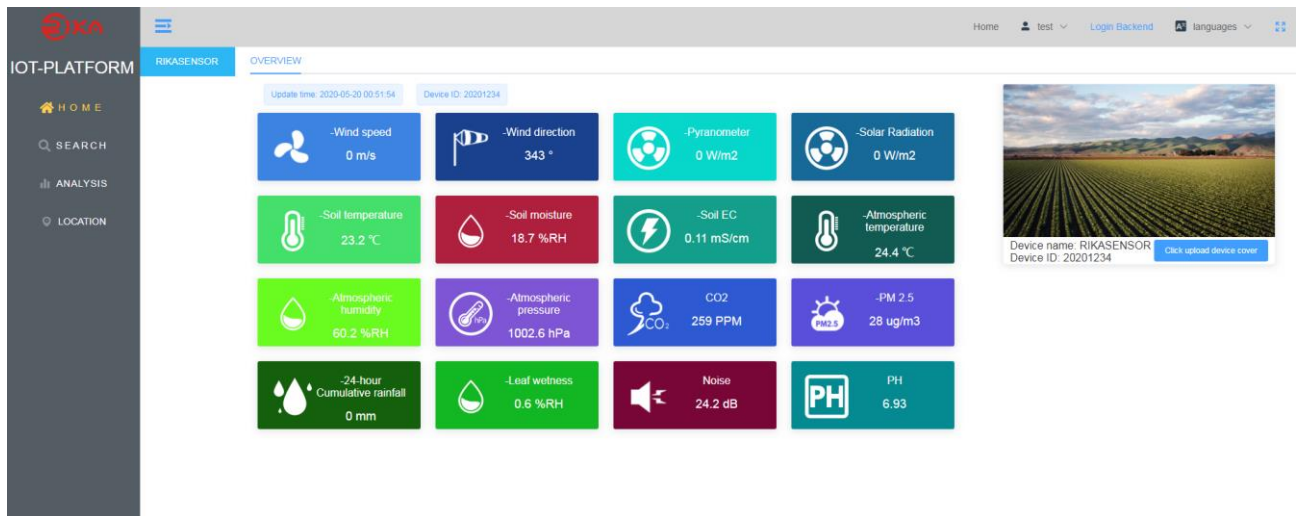
Graph Interface



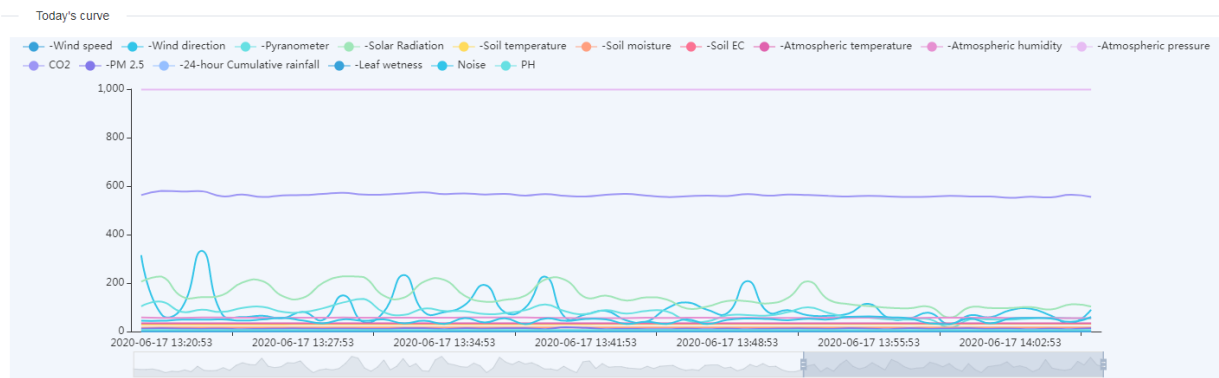
Help Interface

RK900-01 Automatic Weather Station

RIKA CLOUD



Real-time Data Interface



Data Curve Interface

IoT-PLATFORM

HOME

SEARCH

ANALYSIS

LOCATION

RIKASENSOR

Camera

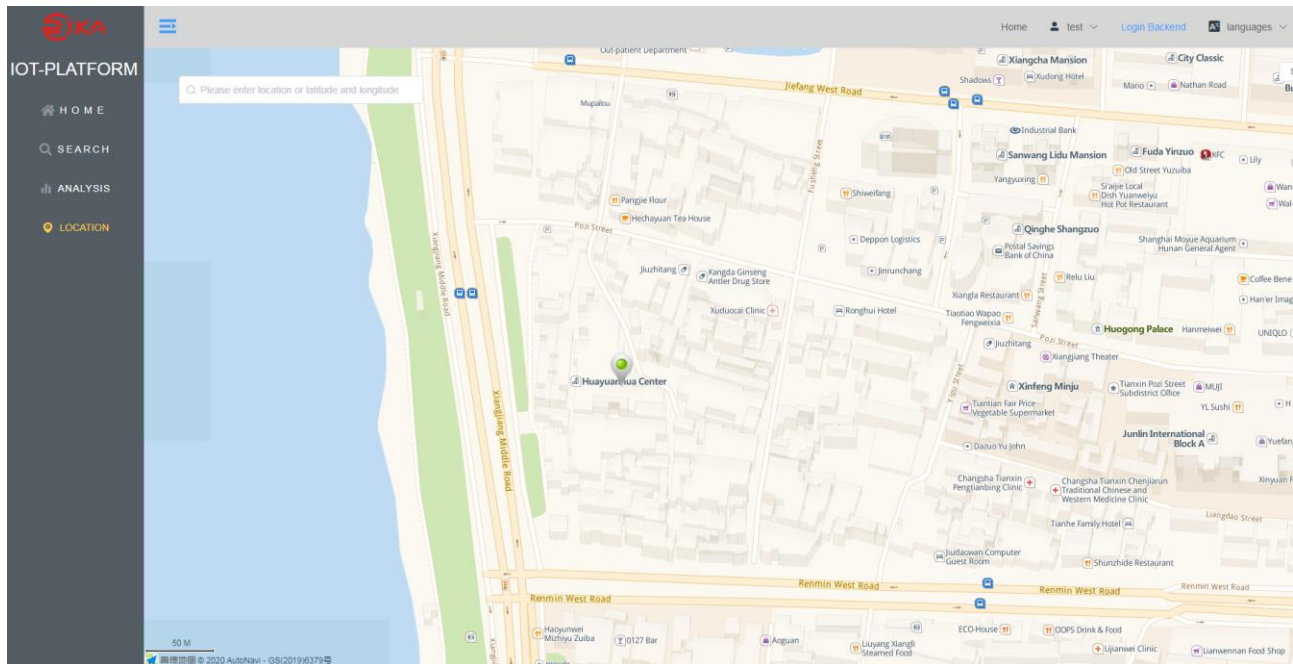
Date	-Wind speed (m/s)	-Wind direction (°)	-Pyranometer (W/m2)	-Solar Radiation (W/m2)	-Soil temperature (°C)	-Soil moisture (%RH)	-Soil EC (mS/cm)	-Atmospheric temperature (°C)	-Atmospheric humidity (%RH)	-Atmospheric pressure (hPa)	CO2 (PPM)	-PM 2.5 (µg/m3)	-24 hour Cumulative rainfall (mm)	-Leaf wetness (%RH)	Noise (dB)	PH
2020-06-17 14:09:53	2	67	48	114	31.2	17	0.11	34.2	55.9	998.2	562	12	0	1.1	52.3	5.1
2020-06-17 14:08:53	3.1	71	63	114	31.2	16.7	0.11	34.2	55.5	998.4	557	12	0	1.1	63	5.1
2020-06-17 14:07:53	1.3	60	62	111	31.2	16.7	0.11	34.2	55.6	998.2	557	12	0	1.1	53.5	5.1
2020-06-17 14:06:54	1.3	90	54	103	31.1	16.9	0.11	34.2	55.7	998.2	555	13	0	1.1	59.7	5.1
2020-06-17 14:05:53	1.7	33	55	112	31.1	16.6	0.11	34.2	55.3	998	564	10	0	1.1	40.2	5.1
2020-06-17 14:04:53	3.4	66	57	91	31.1	17.1	0.11	34.2	56	998.2	554	12	0	1.1	53.9	5.1
2020-06-17 14:03:53	1.7	94	54	101	31	16.9	0.11	34.2	56.8	998.1	556	10	0	1.1	56.1	5.1
2020-06-17 14:02:53	2.5	88	49	97	30.9	17	0.11	34.2	56.5	998.1	552	12	0	1.1	53.5	5.1
2020-06-17 14:01:53	0.8	59	50	97	30.9	16.9	0.11	34.2	57.9	998	557	11	0	1.1	34.1	5.1
2020-06-17 14:00:53	0.5	67	50	100	30.8	16.8	0.11	34.2	56.9	998	557	13	0	1.1	53.5	5.1
2020-06-17 13:59:53	0.7	29	17	58	30.8	16.6	0.11	34.2	57.2	998	560	12	0	1.1	30.8	5.1
2020-06-17 13:58:53	1	77	51	102	30.6	17	0.11	34.2	56.9	998	556	11	0	1.1	34.1	5.1
2020-06-17 13:57:53	2.9	54	49	96	30.6	16.4	0.11	34.2	56.5	998.2	555	13	0	1.1	54.4	5.1
2020-06-17 13:56:53	0.8	55	50	98	30.5	16.8	0.11	34.2	56.4	998.2	557	10	0	1.1	58.7	5.1
2020-06-17 13:55:53	0.2	114	57	105	30.5	16.8	0.11	34.2	57.5	998	560	12	0	1.2	62.5	5.1
2020-06-17 13:54:53	1.1	74	60	113	30.4	16.9	0.11	34.2	56.6	998	557	13	0	1.1	60.5	5.1
2020-06-17 13:53:53	1.5	65	77	132	30.3	16.9	0.11	34.2	56.9	998	560	11	0	1.2	49.6	5.1
2020-06-17 13:52:53	1.2	67	100	207	30.3	16.6	0.11	34.2	56.4	998	563	12	0	1.2	52.8	5.1
2020-06-17 13:51:53	2.4	88	80	139	30.3	16.9	0.11	34.3	56.3	998.2	565	12	0	1.1	46.6	5.1
2020-06-17 13:50:53	1.7	81	66	116	30.3	16.7	0.11	34.3	56.4	998.2	561	11	0	1.2	51.7	5.1

Data Export Interface

Today's statistics						
channel	name	average	minimum	minimum time	maximum	maximum time
e1	-Wind speed	1.4	0	2020-06-17 05:16:45	3.6	2020-06-17 12:09:55
e2	-Wind direction	93	26	2020-06-17 12:21:53	346	2020-06-17 05:20:45
e3	-Pyranometer	284	0	2020-06-17 05:11:44	998	2020-06-17 12:25:53
e4	-Solar Radiation	363	0	2020-06-17 05:11:44	1051	2020-06-17 12:38:53
e5	-Soil temperature	28.3	26.7	2020-06-17 05:11:44	31.4	2020-06-17 14:11:53
e6	-Soil moisture	16.9	16.1	2020-06-17 12:58:53	17.2	2020-06-17 05:12:45
e7	-Soil EC	0.11	0.1	2020-06-17 05:21:45	0.11	2020-06-17 05:11:44
e8	-Atmospheric temperature	33.6	28.9	2020-06-17 05:11:44	34.9	2020-06-17 12:22:53
e9	-Atmospheric humidity	58.4	54.1	2020-06-17 12:22:53	71.5	2020-06-17 05:11:44
e10	-Atmospheric pressure	998.5	998	2020-06-17 13:49:53	999	2020-06-17 05:12:45
e11	CO2	564	542	2020-06-17 12:14:53	613	2020-06-17 11:49:53
e12	-PM 2.5	12.2	10	2020-06-17 12:02:53	19	2020-06-17 05:11:44
e13	-24-hour Cumulative rainfall	0	0	2020-06-17 05:11:44	0	2020-06-17 05:11:44
e14	-Leaf wetness	1.2	1.1	2020-06-17 12:34:53	1.3	2020-06-17 12:13:53
e15	Noise	46.2	30.8	2020-06-17 13:06:53	64	2020-06-17 12:09:55
e16	PH	6.06	5.94	2020-06-17 14:05:53	6.15	2020-06-17 05:11:44

Statistics Interface

RK900-01 Automatic Weather Station



Map Positioning Interface

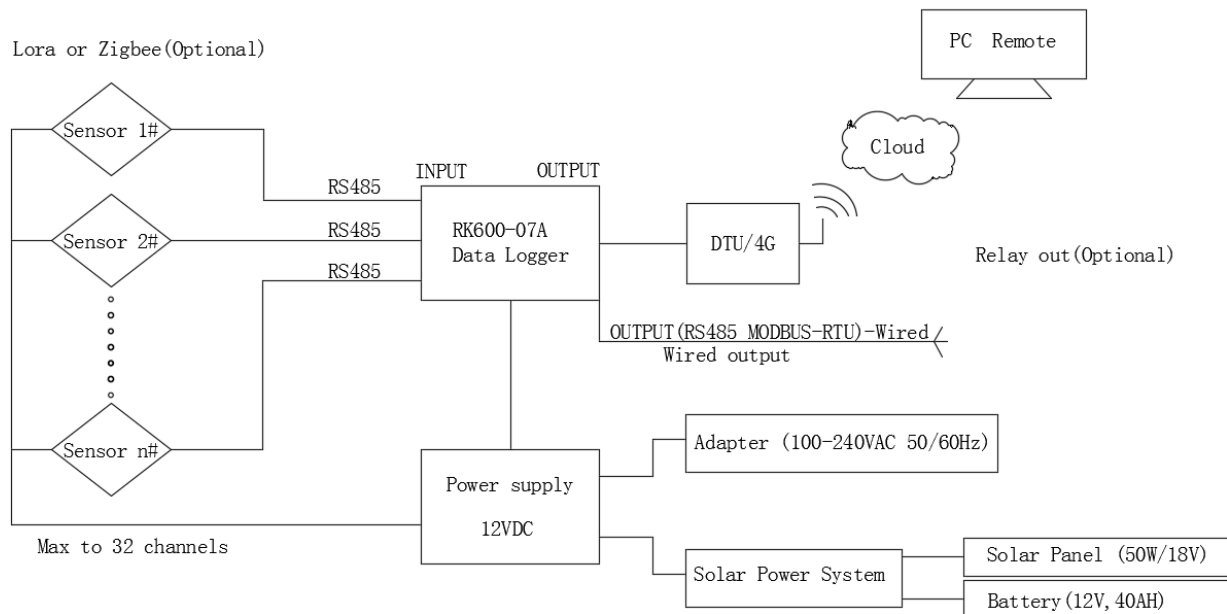


Video Surveillance Interface

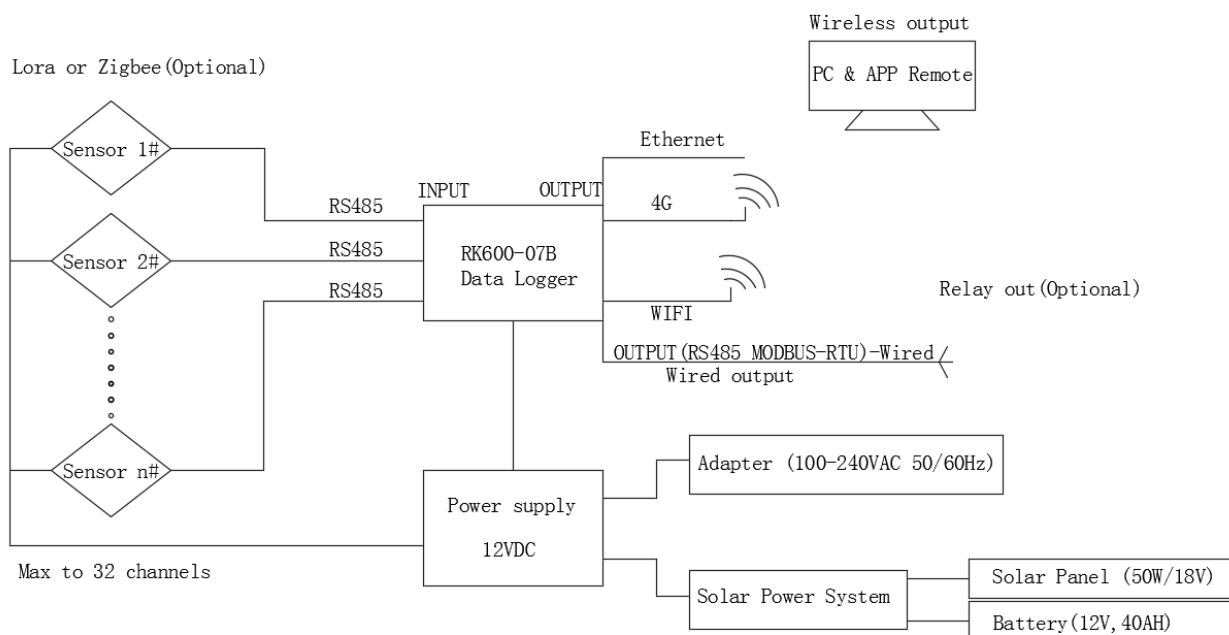
PART LIST

Item	RK600-07A	RK600-07B
Data logger	√	√
Protection box	√	√
Waterproof connector(to sensors)	√	√
Power connection terminal	√	√
USB-RS485 converter	√	√
USB cable	√	√
Power adapter(AC100-240V@12VDC)	√	√
Solar charging controller	Optional	Optional
Solar panel	Optional	Optional
Lead acid battery①	Optional	Optional
Ethernet module	Optional	/
GPRS/2G/3G/4G module	Optional	/
Lora module	Optional	Optional
Zigbee module	Optional	Optional
Relay module	Optional	Optional
Other parts	Customizable	Customizable
①Since air transportation is not available, it is recommended that users purchase locally.		

SYSTEM DIAGRAM



RK600-07A SYSTEM DIAGRAM



RK600-07B SYSTEM DIAGRAM



Complies with applicable CE directives.
Specifications subject to change without notice. Version 4.0
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