

RK600-09 Portable soil moisture measurement recorder



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1 、 Product description

Soil is the main material basis for plants to survive. The quality of the soil environment is directly related to the growth of plants. Providing necessary nutrients for plants is the key to our high yield and income. With the rapid development of science and technology in today's society, traditional experience and judgment can no longer meet the needs of the times. Various intelligent soil monitoring equipment has been introduced one after another, which can comprehensively, scientifically and truly reflect the soil changes in the monitored area, and can provide timely and accurate monitoring points. The soil moisture status of the soil provides important basic information for agricultural disaster reduction and drought relief.

The soil moisture recorder professionally produced by Ruiyica Technology Co., Ltd. has the functions of data acquisition, storage, transmission and management. It is the core component of automatic soil moisture measurement. It can connect 32 parameters at the same time, and can be set by touch screen and color LCD display. , can continuously, stably and reliably monitor and display soil conditions for a long time, and is efficient and accurate, providing important analysis data for agricultural planting. It can also communicate with the server through wired or wireless connections, and the communication protocol can be used for secondary development.

Specifications

ITEM	Technical Specifications
Display	7" color backlit touchscreen
Operating system	Android4.0.3
Screen sleep	Support
Backlight adjustable	Support
Communication status indication	Support
Internal memory	64M, data is stored every hour, can be stored for 6 years; data is stored every 10 minutes, can be stored for 1 year; data is stored every 1 minute, can be stored for 3 months
Sensor interface	Waterproof connector
Communication Interface	RS485, Ethernet, GPRS/2G/3G/4G, WIFI
	LoRa (Optional)
	Zigbee (Optiona)
Communication protocol	Modbus-Rtu
Power supply	Solar power, DC12-24V, AC100-240V
Built-in battery	12.5VDC, 12AH
Monitoring parameters	32 max.
Logging interval	1-240 minutes can be set
U_ disk download	Support
Relay output	Customizable
Average power consumption	<3.5W
CPU	ARM Cortex-A8 (720MHZ)
Electrostatic discharge	Class 4, $\pm 8\text{kV}$
Operating temperature	-40-+75 $^{\circ}\text{C}$
Shock	10-25Hz (X,Y,Z 2g@30min)
FCC	Class A
CE	EN55022 & EN55024
Product Size	400*500*200mm, Support solar power
Protection class	IP55

2. Interface display



Soil moisture series sensor access

3. Display interface and menu

3.1 Main interface



Main interface information:

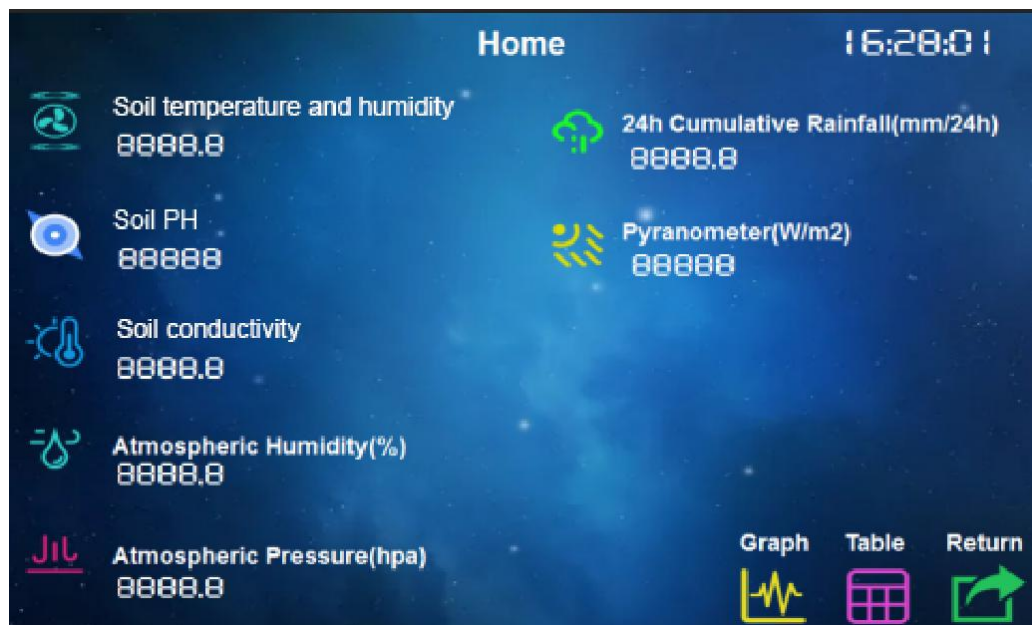
HOME icon button: View real-time data, historical data tables and curves, download historical data.

Setting icon button: enter the recorder setting interface

Help icon button: You can view help information.

ID: Cloud data ID number.

3.2 Home page

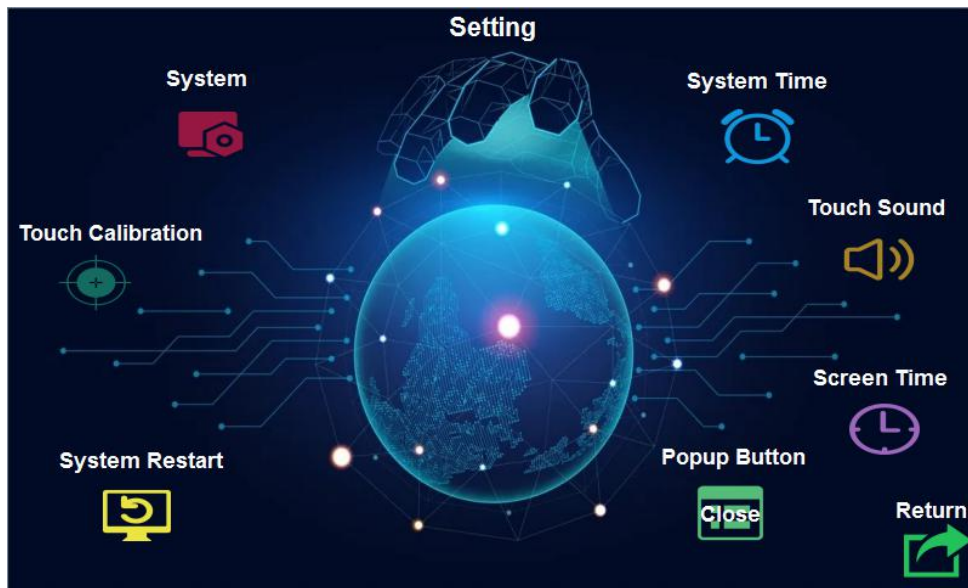


After entering the HOME interface, you can view real-time sensor data.

Graph:View the data graph within 24 hours.

Table:View historical data table.

3.3 Setting interface



After entering the Setting interface, you can set the recorder parameters.
 System: Enter the Android system settings interface.

System Time: set system time.

Touch Sound: Turn button sounds off or on.

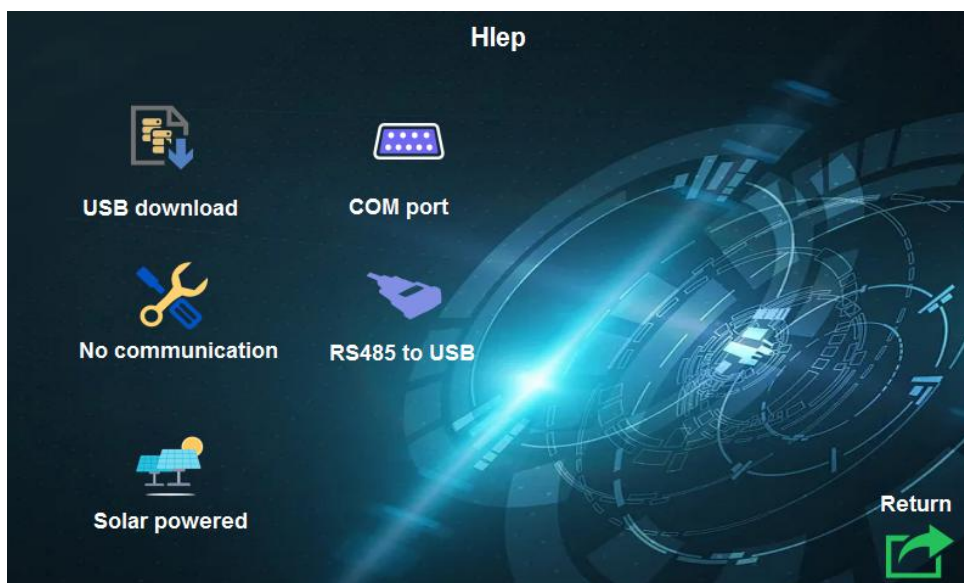
Screen Time: Screen saver interval.

Popup Button: Newsletter popup button.

Touch Calibration: touch screen calibration.

System Restart: Restart the recorder.

3.4 Help interface



After entering the Help interface,View help documentation.
 Suggestion: Before using the recorder, watch the content in the help document, you can quickly understand the functions of the recorder

4. Communication Protocol

4.1 Communication parameters (factory default):

Baud rate: 9600bps, Data bits:8,Stop bit:1,Check bit:no,Address:0x01

4.2 Examples for read data(Max to 32 channels)

Host Scan Order:

Slave id	Function code	Address_H	Address_L	Quantity_H	Quantity_L	CRC_L	CRC_H
0x01	0x03	0x00	0x00	0x00	0x03	0x05	0xCB

Data Logger Response

Slave id	Function code	Number of bytes	Sensors Data	CRC_L	CRC_H
0x01	0x03	0x06	Data(12 bytes)	1 byte	1 byte

Address	Number of bytes	Explain	Resolution
0X0000	2	Channel 1 (1#Soil moisture)	0.1
0X0001	2	Channel 2 (2#Soil moisture)	0.1
0X0002	2	Channel 3 (3#Soil moisture)	0.1

Examples:

Data Logger Response:

01 03 06 03 E8 03 E8 03 E8 CRC CRC

1#Soil moisture:(03E8)H=(1000)D,1000/10=100%

2#Soil moisture:(03E8)H=(1000)D,1000/10=100%

3#Soil moisture:(03E8)H=(1000)D,1000/10=100%



Complies with applicable CE directives.
 Specifications subject to change without notice. Version 3.0
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