

Please read the user manual before using the product

RH581 Wireless Smart Data Collector User Manual

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Attention :

- * Before installation and use, read the operating instructions, and install and operate in strict accordance with the methods in the instructions
- * Do not modify the circuit without authorization
- * The model, specification and electrical parameters of associated short circuit and components shall not be modified during maintenance
- * It is forbidden to install antennas in explosion-proof places

FCC Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help important announcement.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Chapter I Product Introduction

1.1 Features

The RH581 wireless Smart Data Collector is the company's new generation of wireless products, featuring a rich set of wireless data transmission functions and supporting communication methods such as CAT1 and LORA4.0. It possesses functions such as acquisition, calculation, scheduling, storage, and transmission, and can be paired with our wireless sensors and wireless intelligent acquisition terminals. It can be flexibly applied to equipment status monitoring in various industries such as petrochemical, coal chemical, metallurgy, and cement. RH581 supports both power supply and battery-powered, enabling all-wireless deployment.

The RH581, paired with the wireless sensor RW09, supports edge feature index calculation, abnormal trigger acquisition, green channel for abnormal data, working condition start-stop recognition, and equipment speed recognition. When paired with a wireless sensor, it can achieve up to 2M waveform acquisition, meeting the monitoring needs of steady-state equipment ranging from low to high speeds, such as pumps, fans, screw compressors, belt conveyors, vibrating screens, and agitators, as well as stepwise steady-state equipment. It achieves precise, rapid, and effective condition monitoring objectives. The fully wireless monitoring station is powered by a battery pack, enabling fully wireless deployment without the need for on-site cable laying, significantly improving construction efficiency and reducing construction costs.

1.2 Product model

Product name: Wireless Smart Data Collector

Product model: RH581P/RH581G

Function description: RH581 is the product model of this series of data collector.

1.3 Technical parameter table

Power supply		
Power supply	AC100V-AC240V(50/60Hz) or Battery 3.6V	
Basic Parameters		
CPU main frequency	96-192MHz single core	
CPU storage	Internal storage: RAM: 1.8MB SRAM External storage: PSRAM: 16MB FLASH: 256MB/128MB	
Key performance		
Communication mode with server	CAT1: (1)LTE: B2/B4/B5/B12/B13/B66;	
Communication mode with sensor	Sub-GHz	
Communication distance with sensor	400m	
Edge computing	Support	
Product upgrade method		
Handheld Debugger Upgrade	Support the upgrade of Ronds debugger	
Remote firmware upgrad	Remote upgrade via upper computer	
Structural parameters		
Dimensions	176mm×115mm×94mm	long × wide × high
Weight	1.3kg;	
IP Grade	IP66	
Environmental parameters		
Ambient environment	-40℃~70℃, ≤95%RH, non-condensing	
Storage environment	-50℃~85℃, ≤95%RH, non-condensing	
Atmospheric pressure	70kPa ~110kPa	
Product upgrade method		
ESD immunity	EN61000-4-2 Test level: 3 Test voltage: ±6kV (Contact discharge) ±8kV (Air discharge)	
Power frequency	500VAC	

withstand voltage level		
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Chapter II Usage Introduction

2.1 installation

- (1) Set the switch on the power board to "OFF" before installation;
- (2) Antenna: the top of the shell is marked with the position screen of each antenna.

Install the antenna according to the identification and tighten it with tools. The installation torque is $0.6 \pm 0.05\text{N} \cdot \text{m}$ to ensure that it will not be unscrewed by hand.

- (3) After installation, put the main board switch in the "ON" state. After powering on, check the housing indicator. The LED lights up to indicate that it is powered on

2.2 Precautions for operation

- (1) Before installing the instrument, please ensure that you can provide a suitable working environment and sufficient physical space. The installation method is vertical installation.

- (2) The antenna shell of the product is made of plastic material, which has potential electrostatic charge hazard. Avoid friction. Please wipe it with wet cloth when cleaning. It is forbidden to install the antenna in explosion-proof places.

- (3) This instrument needs to be used and maintained by personnel trained for a certain time or special personnel.

- (4) The use of the instrument should be avoided as far as possible: knocking, falling, long time close to high temperature source and long time use in high corrosive environment, so as not to affect the performance of the instrument.

- (5) During the use and maintenance of this product, the model, specification and parameters of the structure and components related to the explosion-proof performance shall not be changed. The transformation of explosion-proof products can only be carried out by the product manufacturer and can only be used after passing the inspection by a qualified inspection agency.

- (6) The user of the product shall not change the associated equipment and matching

equipment of the explosion-proof product at will, otherwise the explosion-proof performance of the product will be changed, resulting in the loss of explosion of the product.

2.3 Repair

- (1) Please read the manual carefully before use and follow the operating steps.
- (2) Do not change any parameters of the data collector circuit.
- (3) Battery replacement shall be carried out in a safe place.

2.4 Maintenance

- (1) A designated person must be responsible for the daily maintenance of the sensor.
- (2) Maintenance personnel must carefully read and be familiar with RH581 Wireless Condition Monitoring Station User Manual and relevant circuit diagrams, and be familiar with the internal and external structure and circuit principle of the sensor.
- (3) During use, maintenance and service personnel should always check whether the sealing part of the data collector is tight and whether the screws are tight.

2.5 Transportation and Storage

- (1) Avoid violent vibration and impact when transporting and handling the data collector.
- (2) Strictly prohibited to put the data collector in the place directly dripping with water when store it.

2.6 Unpacking and Inspection

- (1) Pay attention to safety when unpacking to avoid damage to equipment or injury.
- (2) After unpacking, check whether the appearance of the equipment is damaged and whether the accessories are complete.

(3) Accessories list

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| a) Instruction Manual | 1 pcs |
| b) Data collector | 1 pcs |

c) Product certificate 1 pcs

d) Packing list 1 pcs

Manufacture: Anhui Ronds Science & Technology Incorporated Company
Address: #59 Branch Road of Biomedical park, High-tech district, Hefei,
Anhui, China
Postcode: 230000
Telephone: 4008551298