

Product Operation Instruction

Wireless Gateway BH3002

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Contents

| | |
|---|---|
| 1. Product Description..... | 1 |
| 2. Product Introduction..... | 1 |
| 2. 1. Product Appearance..... | 1 |
| 2. 2. Technical Parameter..... | 2 |
| 3. Function Introduction..... | 2 |
| 3. 1. Maximum Number of Nodes Connected to The Gateway..... | 2 |
| 3. 2. Gateway Channel Description..... | 2 |
| 3. 3. Application Method..... | 2 |
| 4. Communication Distance Description..... | 3 |
| 5. Precautions..... | 3 |
| 6. Service Commitment..... | 3 |

1. Product Description

BH3002 wireless gateway is a new data analysis and processing system based on BeeLPW protocol and ModBus protocol, which can self-organize to form a variety of network topologies.

The BH3002 wireless gateway is simple and convenient to use. The wireless digital signal transmission method eliminates the noise interference caused by long cable transmission. The entire system has extremely high practicability and stability. The BH3002 wireless gateway has a compact structure and a small size. It is composed of modules such as wireless data transceiver node control, protocol conversion, and standard ModBus protocol communication. The BH3002 wireless gateway can form a huge wireless network, support multiple sensor nodes to conduct large-scale structural tests at the same time, and is widely used in fatigue tests, load tests, temperature and humidity tests, etc.

The BH3002 wireless gateway has a wide range of usability. Its communication interface with other devices uses the standard international ModBus protocol. The BH3002 wireless gateway can be connected to any device that supports the same protocol and interface through the RS485 interface and the standard ModBus protocol. The connected device only It can communicate with the BH3002 wireless gateway through the standard ModBus protocol to control the configuration and collection of all nodes under the gateway. In this process, the connecting device does not need to care about the communication process between the wireless node sensor and the gateway, which greatly reduces the difficulty of developing the connecting device.

2. Product Introduction

2. 1. Product Appearance



2. 2. Technical Parameter

| | |
|------------------------------------|----------------|
| Explosion-proof mark | Ex d IIC T6 Gb |
| Explosion-proof certificate number | CE16.1227 |
| Explosion-proof working area | Zone 1, Zone 2 |
| Temperature range | -40°C ~ 70°C |
| Humidity range | ≤95%RH |

3. Function Introduction

The BH3002 wireless gateway can be connected to any device that supports the same protocol and interface through the RS485 interface and the standard ModBus protocol. The connected device can communicate with the BH3002 wireless gateway through the standard ModBus protocol to control the configuration and collection of all nodes under the gateway.

3. 1. Maximum Number of Nodes Connected to The Gateway

The maximum number of nodes connected to the gateway is determined by the number of physical channels of the connected node sensors. For example, if all connected nodes under the gateway have only one physical channel per node, the gateway can connect up to 100 nodes; if all connected nodes of the gateway have two channels per node, the gateway can connect up to 50 nodes; one of the lightning arrester nodes There are 3 physical channels and each physical channel occupies 6 gateway channels, which is equivalent to a total of 18 gateway channels if all three physical channels of a lightning arrester node are configured, so if all gateways are connected to lightning arrester nodes, a maximum of 5 can be connected , Among the 100 channels, up to 3 channels are allowed to receive the indicator data at the same time.

3. 2. Gateway Channel Description

The gateway contains 100 channels, and the node corresponding to each channel is configured by the gateway configuration software. These configurations will not be lost when the gateway is powered off. Example: If channel 1 of the gateway is assigned to a wireless temperature node, the operation on gateway channel 1 is equivalent to the operation on the wireless temperature node.

3. 3. Application Method

The antenna is potted in the antenna base to form an antenna assembly. The antenna assembly has two application methods, one is to connect directly to the explosion-proof box, the other is to connect the explosion-proof box, and the explosion-proof box and the explosion-proof box are connected by a cable.

4. Communication Distance Description

For the radio frequency characteristics of the wireless gateway, please use the external antenna provided.

Factors affecting communication distance: terrain characteristics, obstacles, antenna gain, antenna height, direction, other radio interference, weather conditions and many other aspects (the factors listed here do not represent all).

Ways to improve communication quality:

- (1) Make the antenna of the transmitting node face the antenna of the receiving node or gateway.
- (2) Try to make sure that there are no direct obstacles between the sensor nodes, and try to keep the device in a high and unobstructed position.
- (3) Try to mount the antenna as high as possible to prevent the antenna from receiving attenuation from the ground or other planes.

5. Precautions

The positive and negative power of the gateway must be confirmed before powering on to prevent damage to the equipment due to reverse connection of the power supply.

It is forbidden for users to disassemble or assemble by themselves.

Avoid installing this product in a fully enclosed metal cabinet.

6. Service Commitment

This product is guaranteed for 12 months free of charge.

During the free warranty period, the company will be responsible for free maintenance or free replacement services for product quality problems that occur under normal use.

The following conditions are not covered by the free warranty:

- (1) Products beyond the warranty period.
- (2) Force majeure, such as all earthquakes, fires and other natural disasters or accidents (theft, loss, etc.) caused by force majeure factors such as products cannot work normally.
- (3) Products damaged by man-made.

FCC Warning:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

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.
- 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 & your body.

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