



Note: Please read this user manual carefully before installation and use!

DG310
Smart Gateway

User Manual

DHMS (Hong Kong) Intelligent Technology Limited



Important Notes:

1. The product is strictly prohibited from being installed in environments containing flammable or explosive gases.
2. It is strictly forbidden to operate the smart gateway with wet hands.
3. To avoid dangerous accidents, the installation and fixation of the product must be carried out in strict accordance with the user manual.
4. After unpacking, check the product for damage and verify the quantity and completeness of all items.
5. Antenna Professional Installation: To ensure optimal performance and operational safety, it is highly recommended that the high-gain antenna for this product be installed and adjusted by qualified personnel. Precise calibration of the antenna's placement, azimuth (direction), and elevation (tilt) is critical for achieving maximum signal strength and communication stability. Professional installation mitigates risks such as signal degradation, equipment damage, or potential safety hazards resulting from improper setup, thereby safeguarding your investment and ensuring you receive the full benefits of the product. Please contact our technical support team or an authorized service provider to arrange for professional installation services.

Note: The products are not sold to the general public but only to distributors.

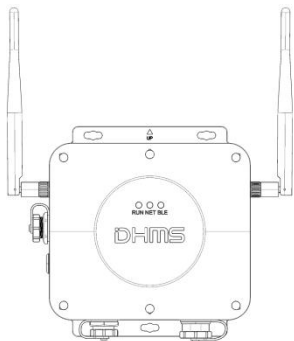
1 Product Introduction

The DG310 Smart Gateway is a key device in the intelligent operation and maintenance management system for industrial equipment. It serves as a bridge between wireless sensors and upper-level systems (such as the DHMS system). It connects to wireless sensors via Bluetooth, collects data acquired by the sensors, and uploads the data to a host computer or cloud system.

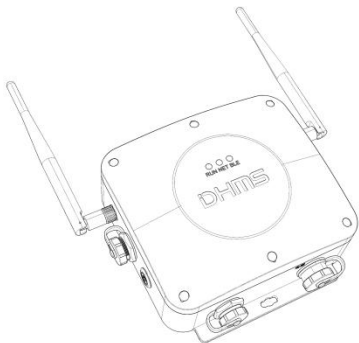
2 Main Technical Parameters

Category		Specification
Power Supply	Operating Voltage	AC 100 to 240 V
	Power	4 W
Communication	Upstream Communication	WIFI, Ethernet
	Downstream Communication	Bluetooth
	Load Capacity	Stable for 60+ sensors
Ambient Temperature Acquisition	Measurement Range	-20°C to +80 °C
	Resolution	0.1 °C
	Accuracy	±2 °C
Operating Environment	Ambient Temperature	-20°C to +80 °C
	Relative Humidity	5%–90% RH. No condensation
Housing	Protection Class	IP65
	Dimensions	198 mm × 210 mm × 70 mm (excluding antenna) 302 mm × 210 mm × 70 mm (including upward antenna)
	Installation Method	Wall-mounted

3 Product Appearance



Front view



Perspective view

The function definitions of the indicator lights
(as shown in the figure above).

Function	Silk Print	Status	Description
Operating status indication	RUN	Always on	After power - on activation, the indicator light is always on.
		Always off	In the inactive state, the indicator light is always off.
Network status indication	NET	Always on	In the powered - on state, after two flashes when the network is normally connected, the light is always on when the connection with the server is normal.
		Always off	In the inactive or network - disconnected state, the indicator light is always off.

Bluetooth status indication	BLE	Always on	In the powered - on state, when connected to the mobile phone Bluetooth, the indicator light remains always on.
		Flashing	When the sensor has data transmission, the indicator light flashes.

4 Installation and Operation

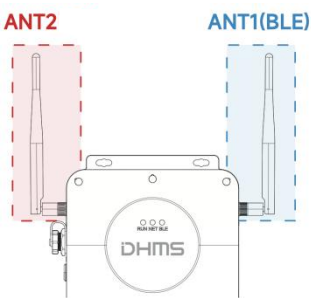
4.1 Unpacking Inspection

The list of gateway accessories is as follows

List of Accessories			
Serial Number	Name	Remarks	Quantity
1	Main Unit	-	1 piece
2	Fixed Back Plate	-	1 piece
3	Inner Hexagon Screws	-	4 pieces
4	Expansion Bolts	-	5 pieces
5	Positioning Stickers	-	1 sheet
6	Hexagon Wrench	6 mm	1 piece
7	Antennas	Two 2.4G antennas	2 pieces
8	Power Connector	-	1 piece
9	Network Port Protection Connector	-	1 piece
10	Certificate of Conformity	-	1 piece
11	Instruction Manual	-	1 piece
12	Quick Installation Guide	-	1 piece

4.2 Antenna Assembly

Install the 2.4G WiFi antenna on ANT2 on the left side of the gateway, and install the 2.4G antenna on ANT1 (BLE) on the right side of the gateway, as shown in the figure below.



4.3 Selection of Gateway Installation Location

Read the following installation precautions and select a suitable on-site installation location.

4.3.1 There is a stable network supply condition on site (e.g., there is a wired Ethernet network supply condition or 2.4G WiFi signal);

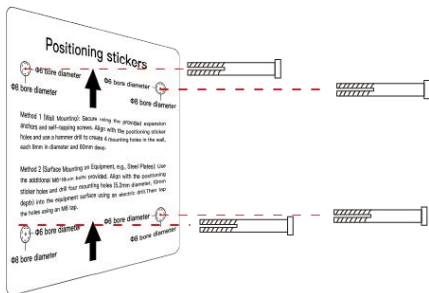
4.3.2 Install in a location where AC power can be easily routed;

4.3.3 The distance between the gateway and the monitored device is within 100 meters;

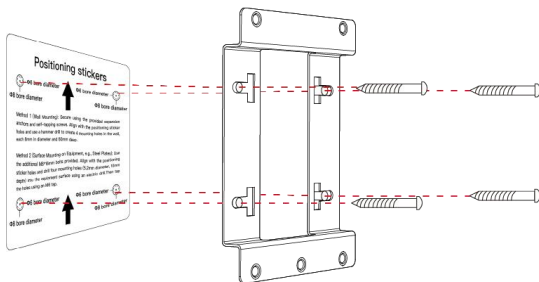
4.3.4 It is recommended that the installation height of the gateway be higher than that of the device's monitoring point, and there should be no obstacles between the gateway and the monitoring point to facilitate signal transmission.

4.4 Wall-mounted Installation of the Gateway

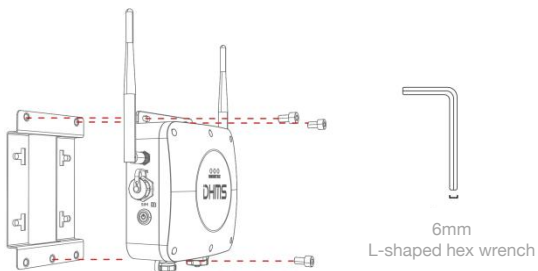
4.4.1 Stick the positioning sticker on the selected wall, use an impact drill to drill four holes with a diameter of 8 mm and a depth of 60 mm on the wall (according to the hole opening indication position on the positioning sticker), and put the plastic expansion tubes into the holes, as shown in the figure below.



4.4.2 Fix the mounting bracket to the wall with 4 self-tapping screws, as shown in the figure below.

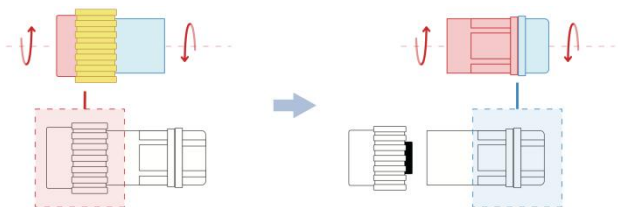


4.4.3 Fix the gateway to the bracket with an "L-shaped hex wrench (6 mm)" and "3 M8 screws".



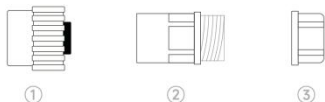
4.5 Power Connection

4.5.1 Unscrew the power connector in the accessories, and use a Phillips screwdriver to connect the N (neutral wire), L (live wire), and E (ground wire) \perp of the power cord according to the identification specifications, as shown in the figure below.

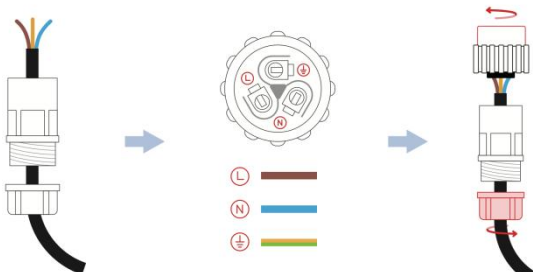


Use your left hand to hold the red - marked module in the picture and screw it, and use your right hand to hold the blue-marked module and screw it respectively.

Note: Do not screw the yellow-marked module.



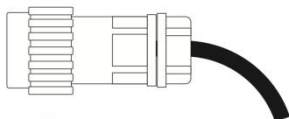
Disassemble the power supply parts of the connector according to the diagram above.



Slide parts ② and ③ onto the power cable as shown in the diagram.

Invert part ① and connect the electric wires as shown in the diagram.

Screw parts ①, ②, and ③ to assemble them.

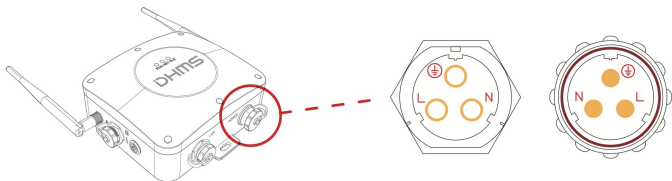


The electric wiring is completed.

Note 1: Non-professional electricians are strictly prohibited from operating. The entire power wiring process must be carried out under power-off condition.

Note 2: Under normal circumstances, the N (neutral wire) is blue or green, the L (live wire) is brown or red, and the E (ground wire) is yellow-green striped.

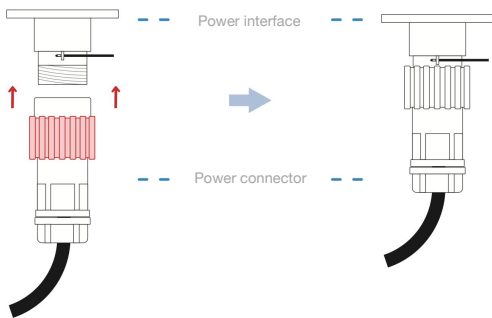
4.5.2 Tighten the properly wired power connector and plug it into the power interface of the gateway (note that the wire sequence of L, N, and ground \perp between the power connector and the power interface must be consistent).



The word "POWER" indicates the power interface of the gateway.

Power interface of the gateway.

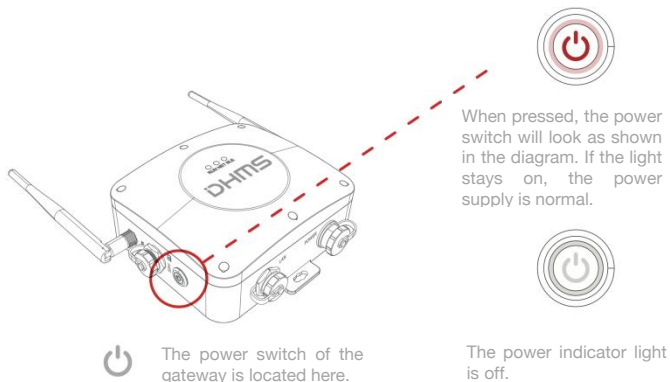
Power connector.



Align the interfaces on both sides according to the consistent wiring sequence, insert and screw the red-marked module in the figure on tightly.

The electric wiring is completed.

4.5.3 After power is on, press the power switch on the left to check whether the power supply is normal (if normal, the switch indicator will be always on). After the check, turn off the power (keep the power switch indicator in the off state).



4.6 Network Access

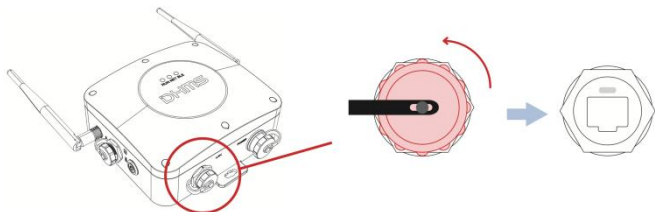
Network access is divided into two ways: accessing wireless network (4G cellular network) and accessing wired network.

4.6.1 Method 1: Access Wireless Network

If connecting to a WiFi network, there is no need to perform any operation in this step. Simply follow the guidance in the next step "Add Gateway in App" to complete the configuration.

4.6.2 Method 2: Access Wired Network

The DG310 gateway can be connected via wired Ethernet (ensure that the on-site network communication is normal). The specific connection steps are as shown in the figure below.

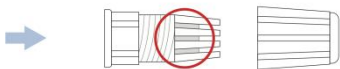


The word "LAN" indicates the Ethernet port of the gateway.

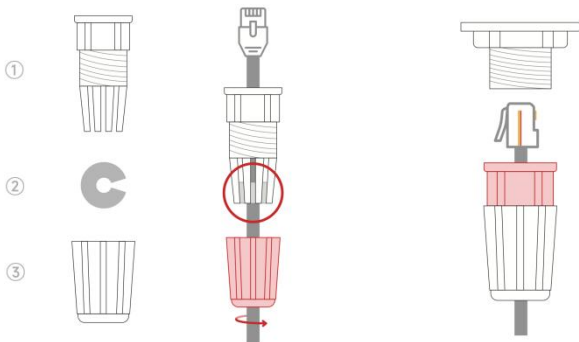
Unscrew the top cover counter-clockwise to expose the Ethernet port.



Screw the red-marked module of the protective joint of the network port.



Remove the C-shaped retaining ring.



Slide parts ①, ②, and ③ onto the network cable as shown in the figure, and screw the red - marked module on tightly.

Note that the C-shaped retaining ring must be reinstalled; otherwise, the protective function will be compromised.

Insert the Ethernet cable connector in the correct orientation, screw the red - marked module on tightly, and complete the electric wiring.

Note: If waterproof and dustproof functions are not required, the network port protective connector is not necessary for the network port, and the network cable can be directly connected.

4.7 Add Gateway via App

Open the "DHMSCare Intelligent App" to enter the homepage, select "Add Gateway" on the guide page, and follow the App prompts to complete the gateway addition.

5 Judgment of Signal Strength at the Gateway Installation Location

The WiFi signal strength reported by the gateway can be queried via the mobile App to

determine the quality of the WiFi signal at the installation location.

Signal Strength (RSSI Value)	Judgment	Solutions
$\text{RSSI} < -90$	Extremely poor	1. Change the installation location of the gateway. 2. Adjust the direction of the gateway antenna.
$-90 \leq \text{RSSI} \leq -80$	Poor	
$-80 \leq \text{RSSI} \leq -70$	Average	
$-70 \leq \text{RSSI} \leq -60$	Good	
$-60 \leq \text{RSSI}$	Excellent	

6 Troubleshooting and Resolution

Phenomenon	Possible Fault Causes	Solutions
The power switch is not on.	Incorrect connection of the aviation plug.	Reconnect the power line as required.
	The switch is not turned on.	Press to turn on the switch.
WiFi cannot connect normally.	The WiFi signal is poor.	Move to a place with a better signal.
	Incorrect input of WiFi account password.	Re - input the correct WiFi account and password.
	The network of the on-site power supply equipment is disconnected.	Repair the network of the power supply equipment.
Ethernet networking abnormality	Abnormal Ethernet access.	Check the network cable and reconnect.
Unable to connect to the wireless sensor	Abnormal connection of the Bluetooth antenna.	Retighten the antenna.

	The distance to the wireless sensor is relatively far, resulting in weak Bluetooth signal.	Move the gateway to a position closer to the wireless sensor.
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If the above measures cannot solve the problem, please contact the manufacturer or dealer for solution!

7 Repair and Maintenance

- Product after-sales service must be carried out by the manufacturer or authorized dealers;
- Non-professional maintenance personnel are strictly prohibited from disassembling the gateway. Unauthorized disassembly of the gateway will lead to the invalidation of the quality guarantee;
- The power supply of the gateway must be disconnected before maintenance.

DG310:

2.4G Wi-Fi: 2412~2462 MHz(802.11b/g/n20), 2422~2452 MHz(802.11n40)

BLE(1 Mbps/2 Mbps): 2402-2480 MHz

Maximum Peak Output Power

2.4G Wi-Fi:

802.11b: 15.815 dBm

802.11g: 19.326 dBm

802.11n20: 18.044 dBm

802.11n40: 18.39 dBm

BLE(1 Mbps): 9.93 dBm

BLE(2 Mbps): 9.90 dBm

FCC Statement

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.

FCC 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& your body.

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.

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