5.2.2 Indicator status

The indicator light will display the working status of the current gateway, and the specific meaning is shown in Table 4.

Table4 Functions of indicator light

Name	Effect	Status display
Work	Power LED, Wi-Fi connection LED	The indicator light is on, and the power supply works normally; Flash (interval less than 0.5 seconds) for the Wi-Fi connection in progress; Slow flash (interval is 1 second) indicates successful Wi-Fi connection Slow flashing (10 seconds interval) indicates successful platform connection
IoT	4G communication indicator	Double color light, blue when sending data, green when receiving data
COM 1	COM 1 communication indicator	Double color light, blue when sending data, green when receiving data
COM 2	COM 2 communication indicator	Reserved indicator light, not used

6 Installation, commissioning and operation

6.1 Installation inspection and instructions

Before installation and use, check whether the gateway flag is consistent with the working conditions used. Correctly connect the power supply line, and connect the gateway and terminal equipment with the RS-485 communication line. Configure the network by scanning the gateway QR code through APP and bind the circuit breaker by networking. After correct connection and communication connection, the terminal equipment can be controlled to perform corresponding actions.

6.2 Installation mode

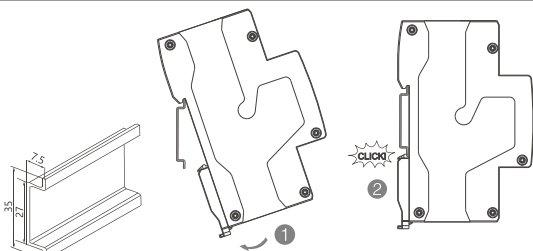TH35-7.5 mounting rail is used for installation, as shown in Figure 6.

Figure6 Installation Diagram

6.3 Disassembly method

When disassembling, it is necessary to press the stopper with a tool to remove it, as shown in Figure 7.
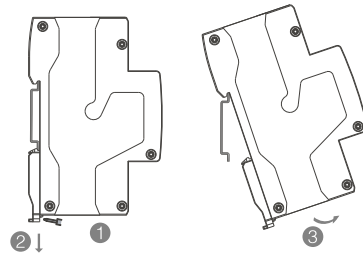

Figure7 Disassembly Diagram

6.4 Wiring selection

The power input port is connected to the+12V and GND ends of DC12V. Generally, the wire cross -sectional area is (0.2-1) mm² Copper conductor:RS-485 communication line generally selects line cross -sectional area of (0.2-0.5) mm²Shielded twisted pair. The stripping length is shown in Figure 8. The connection line of the special power supply and communication port for the circuit breaker needs to use the customized line of Chint special circuit breaker.

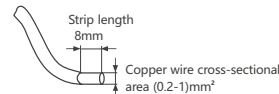Please consult the sales department for details.

Strip length 8mm

Copper wire cross-sectional area (0.2-1)mm²

Figure8 Schematic Diagram of Terminal Stripping

7 Maintain

The gateway shall be checked regularly during operation;

After the gateway has a fault, it should be eliminated first. Then restart the device to check whether it returns to normal. If it fails to return to normal, replace the device.

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8 Troubleshooting

Table5 Example of Fault Analysis and Troubleshooting

Fault phenomenon	Cause analysis	Exclusion method
All lights do not work	The gateway is not powered on, and the wiring screws are not pressed tightly or loose	Check whether the terminal blocks are tightened or inserted loosely
IoT indicator does not flash	4G not communicating	1. IoT indicator does not flash after the device is connected to Wi-Fi 2. Check whether the SIM card is inserted
APP shows offline	1. The device is not connected to the network 2. The device is not connected to the platform	1. Check whether the router works normally. If it still cannot be connected, reconfigure the gateway or replace the device 2. Check whether the SIM card is inserted 3. Press and hold the key for 10 seconds to restore the factory and reconfigure the gateway network Rebind the APP after unbinding the gateway

9 Warranty period, environmental protection and other legal provisions

9.1 Warranty period

Under the normal storage and transportation conditions, and the product package or product itself is in good condition, the warranty period of the product is 24 months from the date of production.

The following conditions are not covered by the warranty:

1) Damage caused by improper use, storage and maintenance of users.
2) Damage caused by organizations or personnel not designated by the company, or self disassembly and maintenance.
3) The product exceeds the warranty period.
4) Damage caused by force majeure.

9.2 Environmental protection

In order to protect the environment, when this product or its components are scrapped, please properly treat them as industrial wastes; Or it can be delivered to the recycling station for classified disassembly, recycling and reuse according to relevant national regulations.

CHiNT
CHINT ELECTRICS

SMG-WL1SR
Smart Gateway

User Instruction

IEC 62368-1:2020+A11:2020

⚡ Safety Alert

1. It is strictly prohibited to install the product in an environment containing flammable and explosive gases and wet condensation, and it is strictly prohibited to operate the product with wet hands.
2. It is forbidden to touch the conductive part of the product during the work.
3. The installation, maintenance and servicing of the product must be carried out by professionals to ensure that the line is powered off.
4. Children are not allowed to play with products or packaging.
5. Enough space and safety distance shall be reserved around the product installation.
6. Do not install in the place where the gas medium can corrode metal and damage insulation.
7. When the product is installed and used, the standard wire must be applied and the power supply and load that meet the requirements must be connected.
8. In order to avoid dangerous accidents, the installation and fixation of products must be carried out in strict accordance with the requirements of the instructions.
9. After removing the package, check whether the product is damaged and check the integrity of the item.
10. Please connect this product correctly in strict accordance with the wiring instructions.

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1 Main purpose and scope of application

Smart gateway SMG-WL1SR (hereinafter referred to as gateway) is a special data protocol converter. The gateway network can be easily configured with WPanel APP; and the addition, deletion, data collection and remote control of devices can be realized. The gateway is installed with TH35-7.5 mounting rail, which is convenient for users.

2 Normal use, installation, transportation and storage conditions

2.1 Normal service conditions
- Working environment temperature: - 25 ℃~+70 ℃, and the average working temperature for 24 hours shall not exceed+35 ℃;
- Storage ambient temperature: - 40 ℃~+70 ℃;
- Humidity of the working environment: the relative humidity of the atmosphere shall not exceed 50% when the ambient air temperature is+40 ℃, and a higher relative humidity is allowed at a lower temperature, such as 90% at+20 ℃. Appropriate measures shall be taken for occasional condensation due to temperature changes;
- Altitude: the installation site shall not exceed 2000m;
- Pollution level: Level 3;
- Protection grade: Ip20;
- Installation category: Class II.

2.2 Installation conditions
Under the conditions of meeting the safety warning, the gateway should be installed vertically, without obvious shaking, shock and vibration.
2.3 Transportation and storage conditions
During storage and transportation, the products shall not fall or be attacked by rain or corrosive gas.

3 Main technical parameters

3.1 Basic parameters of control power circuit
The gateway input voltage is DC12V, and the power supply used must be less than 100W and meet the PS2 level standard.

3.2 Communication port standards and characteristics
1) RS-485: It conforms to TIA/EIA-485-A standard, generally referred to as RS-485 standard, and can be connected to 16 terminal devices through RS-485 bus at most.
2) Wi-Fi: Comply with 802.11 b/g/n (802.11n, speed up to 150 Mbps) protocol, frequency range 2.4GHz-2.5GHz.
3) Bluetooth: conforms to IEEE 802.15.1 standard and Bluetooth V5.1 standard.
4) 4G: Comply with LTE-TDD and LTE-FDD standards of LTE Advanced. See Table 1 for details

Table1 4G Communication Standards

Standard	Frequency band	Uplink and downlink rate
LTE-TDD	B34/B48/B39/B40/B41	Uplink/downlink ratio 1: maximum 6Mbps (DL)/maximum 4Mbps (UL) Uplink/downlink ratio 2: maximum 8Mbps (DL)/maximum 2Mbps (UL)
LTE-FDD	B1/B1/B3/B5/B8	Upstream/downlink ratio: 10Mbps (DL) at most/5Mbps (UL) at most

3.3 Basic communication parameters
1) RS-485 port: The default Modbus address of the gateway is 0x01.The default configuration is: 19200bps baud rate, 8 data bits, even parity check, and 1 stop bit.
2) Wi-Fi: The default mode of Wi-Fi is Station. The default configuration is: IP mode DHCP; Wi-Fi name TEST, Wi-Fi password 12345678.

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3) 4G: It is enabled by default. When the Wi-Fi network is abnormal, it will automatically switch to 4G operation.

4 Outline and installation dimensions

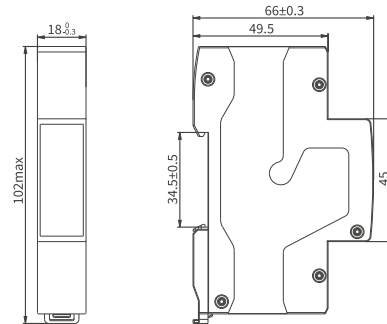### 4.1 Overall dimension (unit: mm)

Figure1 Outline and Installation Dimensions

4.2 Power port
SMG-WL1SR gateway has a power input port with a spacing of 3.8mm, as shown in Figure 2.
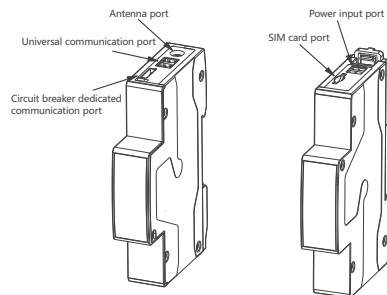

Figure2 Schematic diagram of gateway power supply and communication port

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4.3 Communication port
SMG-WL1SR gateway has one general-purpose RS-485 port and one dedicated RS-485 port, as shown in Figure 2. The universal RS-485 port adopts the plug-in terminal with a spacing of 2.5 mm, and the special RS-485 port is a customized terminal with a spacing of 2.0 mm. Two RS-485 ports are connected inside the gateway.
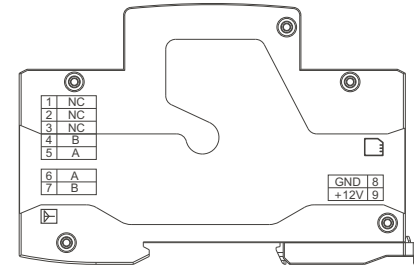

Figure3 Schematic diagram of gateway communication port

Table2 DC12V Gateway Port Description

Grade	Port	Port ID	Port meaning
1	NC port	NC	No Connect Port Not Connected
2			
3			
4	RS-485	B	Dedicated RS-485 port
5		A	
6	RS-485	A	Universal RS-485 port
7		B	
8	Power input port	GND	12V power supply cathode
9		+12V	12V power supply positive pole
	SIM card port	▯	SIM card port socket
	Antenna port	▷	4G antenna

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5 Structure characteristics and working principle

The working principle of gateway is to use hardware circuit to realize communication port conversion, and software program to realize protocol conversion, data forwarding, equipment management and other functions.

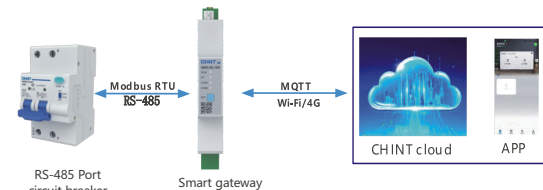### 5.1 System block diagram and communication data flow direction

Figure4 Schematic Diagram of Data Flow Direction

5.2 Keys and indicators
The working status indicator and key positions of the gateway are shown in Figure 5.
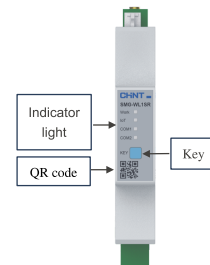

Figure5 SMG-WL1SR DC12V Gateway

5.2.1 Key function
The key of the gateway has multiple functions. See Table 3 for details.

Table3 Description of Multi-function Keys

Name	Function
Long press for 5s	5s Restart the gateway
Long press for 10s	Gateway Restore Factory Settings