Qilowatt MODBUS R2 ETH
User Manual

General Recommendations

Safety Precautions

- Read and follow the instructions carefully.
- Installation work may only be performed by qualified personnel and in compliance with applicable regulations.
- Any modifications or additions not described in this manual are prohibited.
- Always disconnect the device from power before making electrical connections.
- The relay is not a protection device and does not replace proper protection.
- The seller is not responsible for any damage or malfunction resulting from failure to follow these instructions.

Power Supply

- The Qilowatt Modbus R2 ETH device operates on a **12–24 V DC** power supply.
- In case of danger, disconnect the device from the power supply immediately.

Technical Limitations

- To avoid communication interference, do not install signal or communication cables near cables carrying voltages higher than 50 V.
- The DC power circuit must be protected by a fuse rated up to 2 A.

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WiFi Network Limitations

- **Do not use special characters** in the WiFi network name and/or password.
- The maximum length for the WiFi network name (SSID) is **32 characters.**
- To ensure a more stable WiFi connection, disable the following options in your router:
  - For 5 GHz WiFi: disable **"AC/N-Mixed"** mode
  - Disable Wi-Fi Multi-Media **(WMM)**
  - Disable **OFDMA**
- For **Telia X2 routers,** set the WiFi standard to **802.11b/g.**
- The router must allow outbound local network ports **1883** and **8883.**

Specifications

- Power supply: 12–24 V DC
- Relay: AC 250 V / 10 A
- WiFi transmit power: 17 dBm
- Ambient temperature: 0°C – 40°C
- WiFi standard: 802.11 b/g
  WiFi frequency: 2412 – 2472 MHz
- Operating range (depending on location):
  - up to 40 m indoors
  - up to 20 m inside electrical enclosures
- Dimensions: 90 × 90 × 40 mm
- Power consumption: < 2 W

Product Description

The MODBUS R2 device is designed for installation on a DIN rail inside an electrical panel or enclosure. It enables communication with all devices that support the Modbus RTU RS485 communication protocol.

The device is primarily designed to communicate with solar inverters and/or battery systems, and can independently control two potential-free relay outputs to manage other electrical devices — including SG Ready compatible heat pumps.

The device connects to the Qilowatt Cloud Service via a 2.4 GHz local WiFi network, which must have internet connections allowed outbound from the local network.

Using the Factory Reset Button

2 double-presses
Toggles Relay #1 ON/OFF

3 double-presses
Toggles Relay #2 ON/OFF

Press and hold for 45 seconds or more
The device will restore factory settings after a short delay.

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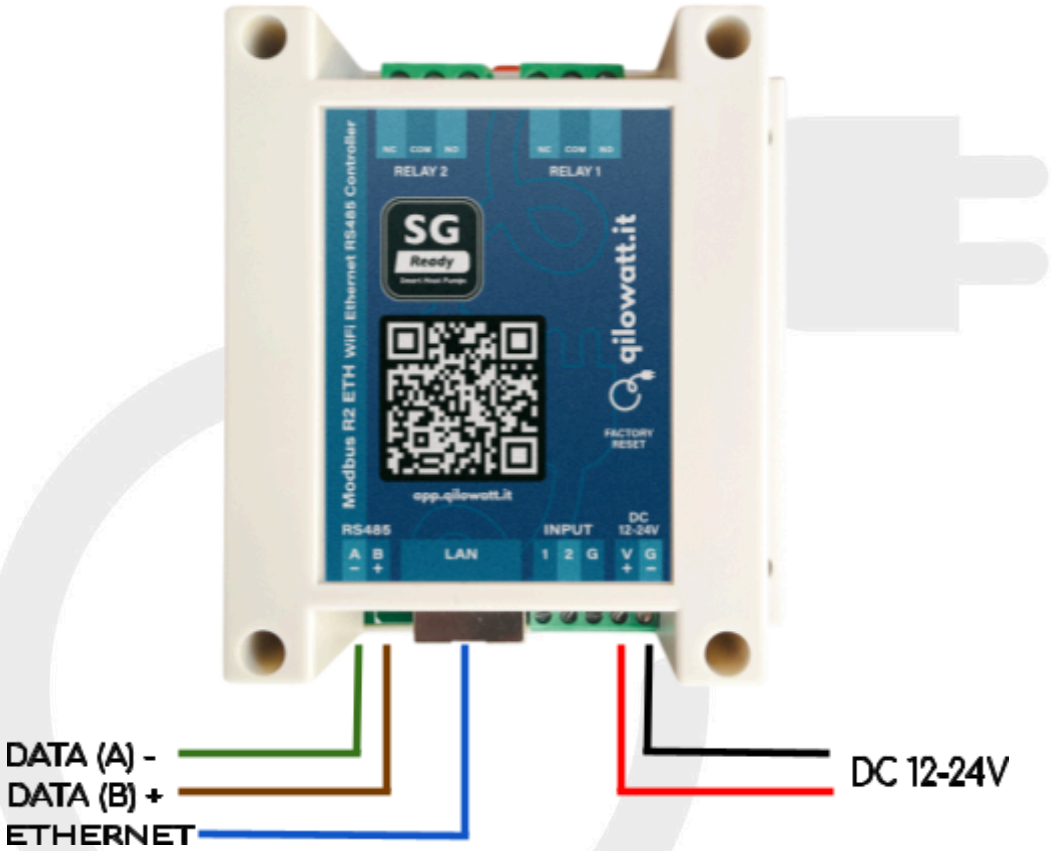
Installation Examples

With Solar Inverter (DC Power Supply)



Legend:

DC 12–24V – Direct current power supply
DATA (A) - – Modbus signal cable A
DATA (B) + – Modbus signal cable B
ETHERNET - Wired internet connection

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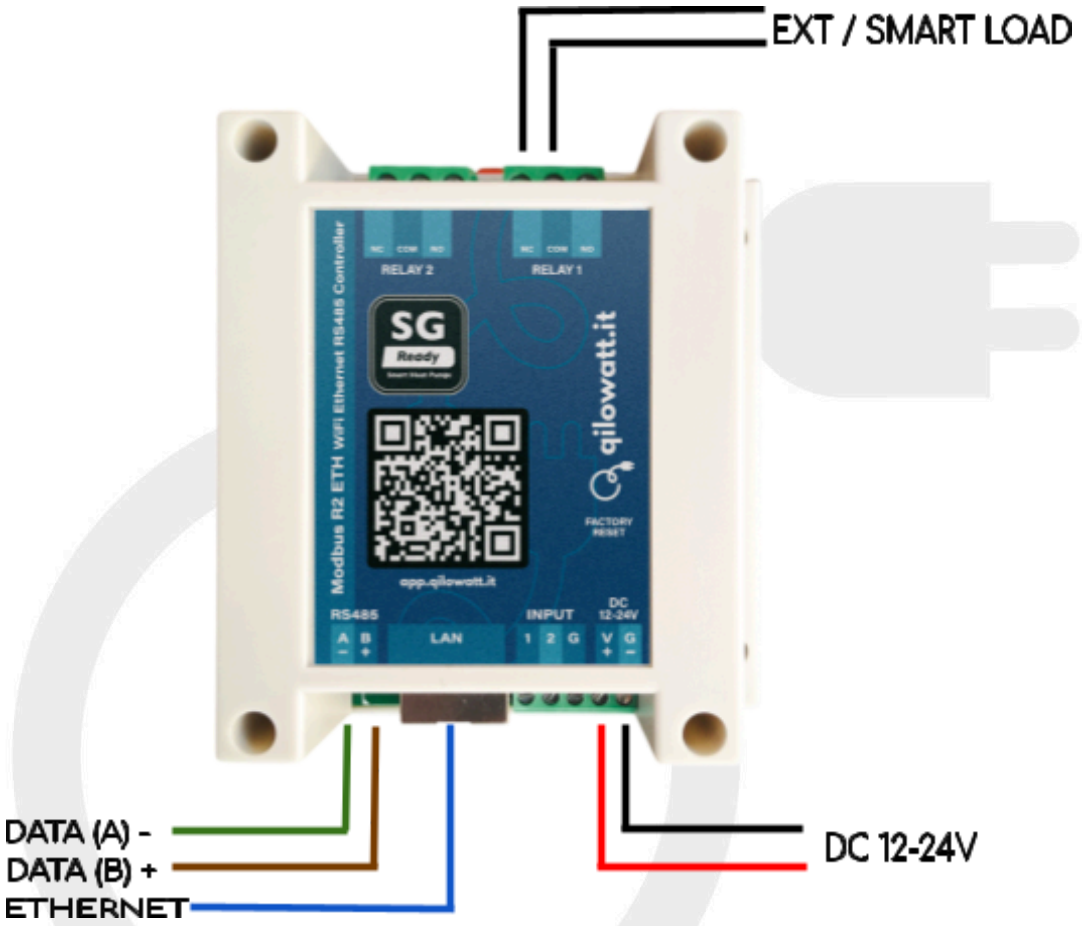
With Solar Inverter (DC Power Supply) and Heat Pump



Legend:

DC 12-24V – Direct current power supply
DATA (A) - – Modbus signal cable A
DATA (B) + – Modbus signal cable B
EXT / SMART LOAD – Potential-free contact connection (e.g., heat pump input or contactor control)
INPUT - Not in use; functionality under development

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Connecting to a WiFi Network

1. Create an account at https://app.qilowatt.it

2. When the device is powered on for the first time, it will create a temporary WiFi network named "Qilowatt-XXX". Connect your smartphone or computer to this WiFi network.

   Important: Do not connect the Ethernet cable before completing this step!

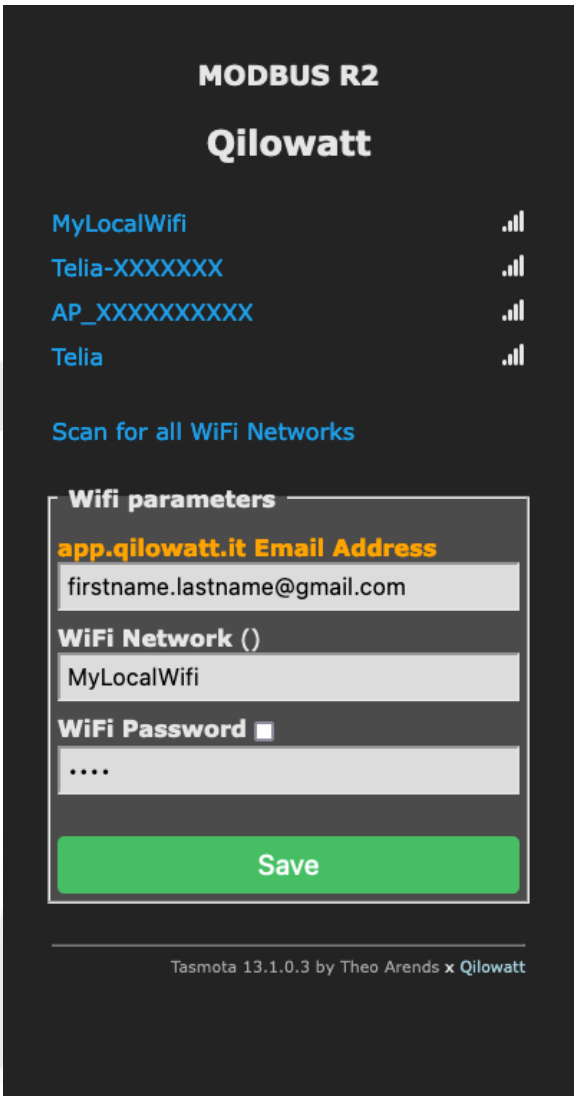
3. Tap "Log in to Wi-Fi network" or a similar option depending on your operating system. If no such prompt appears, open a web browser (Chrome, Firefox) and enter the following address: **192.168.4.1**

4. When the configuration page opens, the device will automatically detect nearby WiFi networks. Click on your WiFi network name — the field "WiFi Network" will be filled in automatically.

5. Enter your Qilowatt app account email address and the WiFi network password.

6. After a successful connection, the "Qilowatt-XXX" network will disappear, and the device will appear in your Qilowatt application.

7. Once you have confirmed that the device is visible on your registered account at app.qilowatt.it, you may then connect the Ethernet cable to the device.



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Additional Information

Changing the WiFi Network

- If the device is connected to the internet and the Qilowatt server, the WiFi network can be changed directly in the Qilowatt app under "Device Info."
- If the device is not connected to the internet, press the Factory Reset button on the device 6 times at a moderate pace using a pen tip or a matchstick. The device will then create a WiFi access point for configuration.

Restoring Factory Settings

- Press and hold the Factory Reset button (using a pen tip or matchstick) for 45 seconds or longer. After a short while, the device will restore its factory settings. You can then add the device again by following the steps described in Connecting to a WiFi Network.

Additional Support and Feedback

If you need help or wish to share feedback, you can always contact us:

- Website https://qilowatt.eu/contact
- Phone: +372 5300 4470 (for technical support)
- User guides and FAQs: https://docs.qilowatt.eu/en/