whatwatt Go
Reference Manual

Important Note

Services like REST API and MQTT and most integrations require a license.

Please visit www.whatwatt.ch/pricing for more information.

Version	1.0
Date	27/02/2025

whatwatt.ch
info@whatwatt.ch

whatwatt

Version	Date	Author	Changes
1.0	27.02.2025	SJ	Initial Version

1. Introduction

whatwatt Go is a compact smart energy monitoring device that bridges your private home network and your smart electricity meter. It receives real-time power consumption or solar production data from the meter and shares this data with one or multiple systems via Wi-Fi or Ethernet LAN. By providing live insight into your household's energy usage and costs, whatwatt Go enables you to optimize consumption. The device can display live energy data on the whatwatt mobile app, and it can integrate with other platforms to help you automate and make the most of your energy data (for example, triggering smart home routines based on energy usage).

2. Device Overview

2.1. Key Features

- **Universal Smart Meter Support** – Compatible with standard DSMR-P1, M-Bus, Kamstrup, pMEP interfaces, allowing it to work with virtually all modern smart meters in use. The device automatically detects many meter types and protocols.

- **Real-Time Monitoring** – Provides live data on energy consumption and production, accessible via a mobile app or integrated systems. You can see in real time how much energy your household is using and what it costs, enabling timely adjustments.

- **Dual Network Connectivity** – Supports both Wi-Fi and wired Ethernet connections for flexibility. If Wi-Fi coverage is weak (e.g. in a basement), you can attach an external antenna or use the LAN port.

- **Multiple Integration Options** – Offers various ways to share data: built-in support for whatwatt cloud, MQTT publish, REST API, and third-party services (e.g. myStrom, Solar Manager). It can also integrate with open-source smart home systems (e.g. Home Assistant) using standard protocols.

- **Local Data Storage** – Equipped with a microSD card slot for local logging or backup of data. This allows recording of energy data or reports on the device itself for offline access or additional processing.

- **No External Power Required** – Draws power directly from the smart meter's interface in most cases, so it does not require a separate power outlet. (It can also be powered via USB-C if needed, see Installation.)

- **Compact & Flexible Installation** – Small form factor device that can be mounted on a DIN rail, attached via magnet, or wall-mounted. Installation is simple and non-intrusive.

- **DIN Rail Mounting** – The package includes a magnet adapter that allows easy installation on a standard DIN rail (common in electrical cabinets) or screw mounting.

- **Mobile App Setup** – Supports Bluetooth-based provisioning through the whatwatt mobile app for easy configuration without needing network details upfront (see Method 1: Bluetooth (Mobile App Setup)).

- **Secure and Open** – Uses encrypted communication (supports WPA2/WPA3 Wi-Fi security) and allows advanced users to set up firewalls or VPN for remote access. The platform is open and scalable, adapting to user needs while keeping data secure.

2.2. Package Contents

Your whatwatt Go kit includes the following items:

- whatwatt Go device
- **Wi-Fi Antenna** – External SMA antenna (attachable).
- **RJ12 Cable** – To connect whatwatt Go to the smart meter's data port (Customer Interface).
- **USB-C Cable** – For optional external power supply (5V DC).
- **Magnet Adapter** – For DIN rail mounting or wall mounting.
- **Quick Start Guide** (if provided by the manufacturer).

2.3. Physical Components and Indicators

The whatwatt Go device has several physical features and ports, as illustrated below.
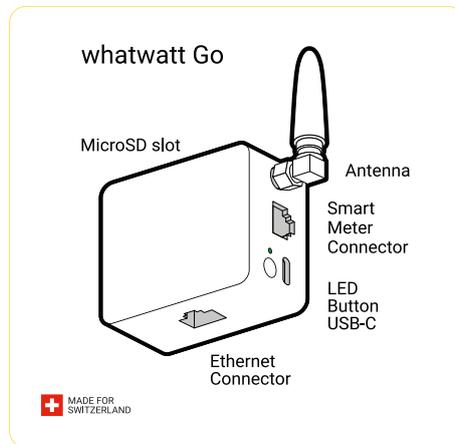
- **Smart Meter Interface Port (RJ12)** – Connector that attaches to your smart meter's communication port (P1 or similar). This is how data (and power, if supported) is delivered from the meter.

- **USB-C Power Port** – For connecting the device to a 5 V DC power source (e.g. a USB adapter) if needed. In many cases, the device can run solely on power from the meter port, but the USB-C port is used for initial setup or if the meter's power is insufficient.

- **Ethernet (LAN) Port** – Standard RJ45 network jack for wired network connection. Use this if you prefer a LAN connection or if Wi-Fi is not available. (Note: The Ethernet interface is disabled when the device is powered only via the meter due to limited power.)

- **External Antenna Connector** – An SMA connector to attach the provided Wi-Fi antenna. Ensure the antenna is firmly attached for optimal wireless range. (If needed, an optional extended antenna accessory is available for very low-signal environments.)

- **MicroSD Card Slot** – Slot for a microSD card, used for local data storage or logging. If using a microSD card, ensure it is formatted as FAT32 (most new cards come pre-formatted). Inserting a card allows the device to store data locally.

- **Status LED** – A multi-color LED on the device that indicates device status and network/connectivity states. The LED can show various colors (red, yellow, green) in solid or blinking patterns to convey modes and errors (see LED Status Indicators for detailed LED codes).

- **Function Button** – A single button used for device operations like pairing, mode switching, and resetting. Different press-and-hold durations of this button initiate different functions (detailed in LED Indicators and Button Operations). The button is typically located on the device's enclosure accessible to the user.

- **Identification Label** – On the device, you will find a label (often on the bottom or side) with a QR code and alphanumeric ID. This label provides the device's unique identifier, default Wi-Fi network password (for AP mode), and possibly the hostname suffix (used for network access). Keep this information handy during setup.

3. Safety Information

Please read and follow these safety guidelines to ensure proper use of the device and to prevent damage or injury:

- **Operating Environment** – Use whatwatt Go only in dry, indoor environments. Operate within a temperature range of -10 °C to 40 °C, and avoid areas of excessive dust, dirt, or vibration. Do not expose the device to direct sunlight for prolonged periods or place it near heat sources.

- **Electrical Safety** – Use only the provided USB-C cable with a 5 V DC power source (standard USB power adapter) if external power is needed. Do not use fast chargers or any adapter that exceeds the

5 V DC requirement. Ensure that the smart meter interface provides power within the specified range – if unsure, consult the meter documentation or contact support. Avoid overloading outlets and make sure cables are properly rated for the device.

- **Cabling and Connections** – When connecting the RJ12 cable to the smart meter, ensure the meter's port is clean and free of debris. Do not force the connector— it should click in easily. Keep all cables free from pinching or bending. If routing cables through a cabinet, use strain reliefs or cable guides to prevent damage.

- D**evice Handling** – Do not open the device's enclosure or attempt to modify or repair it yourself. Internal components are not user-serviceable. Opening the device may void the warranty and could result in electric shock or damage. Handle the unit gently; avoid dropping it or subjecting it to strong impact.

- **Water and Moisture** – Keep the device away from water, rain, or any liquids. The whatwatt Go is not waterproof (Protection class IP20, intended for indoor use only. If the device gets wet, immediately disconnect it from power and the meter, and allow it to dry completely before attempting to use it again.

- **Fire and Hazardous Environments** – Do not use the device in the presence of flammable gases, vapors, or dust. Ensure adequate ventilation around the device; do not cover it with cloth or place it on upholstered surfaces during operation.

- **Children and Pets** – Small components and cables can be a choking or tripping hazard. Keep the device and accessories out of reach of young children. Ensure pets do not chew on cables or the device.

- **Maintenance**: – Periodically inspect the device and cables for any signs of damage (frayed wires, loose connectors, etc.). If the device shows signs of malfunction (such as emitting smoke, a burning smell, or unusual heat), immediately disconnect it from both the meter and any power source. Do not use it again until it has been inspected by qualified service personnel or replaced.

- **Storage** – If storing the device for an extended period, keep it in a cool, dry place in its original packaging or a protective container. Avoid extreme temperature and humidity during storage.

Always adhere to these safety measures to ensure reliable and safe operation of your whatwatt Go.

4. Technical Specifications

Below are the technical specifications of the whatwatt Go device. These have been updated to reflect the latest standards and capabilities of the device:

- **Smart Meter Interfaces** – Supports **P1** interface (DSMR v5.0.2, IEC 62056-21 Mode D), **M-Bus** 24 V/ 12 V and 34 V/22 V (HDLC / DLMS/COSEM, IEC 62056-7-5), and **Kamstrup Omnipower HAN** interface (requires optional whatwatt Kamstrup adapter).

- **Supported Protocols** – Compatible with DSMR 4.x/5.x (Dutch Smart Meter Requirements), IEC 62056 (DLMS/COSEM/OBIS codes), and vendor-specific protocols (e.g., Kamstrup, MEP) in active mode. The device auto-detects the appropriate protocol for the meter, and also supports encrypted meter communication (see Meter Section for key entry).

- **Power Supply Options** – **Via Smart Meter (RJ12 port)** – draws power directly from the meter's customer interface port (no external supply needed), OR **via USB-C 5 V DC, 0.5 A** external source. The device is designed to run without an external adapter under normal conditions. (Note: In some cases, such as certain M-Bus installations or poor Wi-Fi conditions, an external USB-C power source may be required for stable operation.)

- **Power Consumption** – ~0.25 W to 0.75 W during operation (varies with Wi-Fi signal strength, data transmission frequency, and whether Ethernet is in use). This consumption is very low – comparable to an LED night light – and has a negligible impact on your energy bill.

- **Wireless (Wi-Fi)** – 2.4 GHz Wi-Fi, supporting **802.11 b/g/n** standards (20/40 MHz channels). Security protocols: Open, WPA/WPA2, and **WPA3** encryption are supported, as well as WPS for simplified pairing. The device can operate as a Wi-Fi **Access Point** (for direct setup) or as a **Client** (connecting to your router).
  Note – 5 GHz Wi-Fi networks are not supported.

- **Wireless (Bluetooth)** – Bluetooth Low Energy (BLE) interface is available for initial setup via the mobile app (pairing mode). This allows direct provisioning of Wi-Fi credentials using a smartphone. (The BLE radio is used only for configuration and is not used for continuous data transmission.)

- **Antenna** – External Wi-Fi antenna (SMA connector) included for enhanced wireless range. You may use the provided antenna or an approved alternative. For best results, orient the antenna vertically and ensure it is not obstructed by metal enclosures.

- **Wired Network (Ethernet)** – 10/100 Mbps Ethernet (IEEE 802.3/802.3u) with Auto MDI/MDIX support for direct connection to network switches or routers. A standard Ethernet cable (Cat5e or better) can be used.

- **Local Data Storage** – MicroSD card slot supporting standard microSD cards (FAT32 formatted) for local data logging. This allows you to store usage data on the device. Maximum supported card size and logging format may depend on firmware (refer to online documentation for details).

- **Processing & Memory** – (For reference) Built-in processor and memory suitable for handling real-time data acquisition and hosting a web interface. (Exact CPU/RAM specs not user-facing, but device is built for reliability in data logging and networking tasks.)

- **Mounting Options** – **DIN rail, Wall mount,** or **Magnet** attachment. The device dimensions are compact for fitting in tight spaces (see below). The included magnet adapter can snap onto a DIN rail or stick to a metal surface. Screw holes in the adapter allow wall mounting.

- **Operating Conditions** – Temperature range **-10 °C to 40 °C**; Humidity 10% – 85% RH (non-condensing). Ensure the environment is within these limits for optimal performance and lifespan.

- **Protection & Durability** – **IP20** rated enclosure (protection against solid objects >12 mm, no protection against water). Indoor use only. The device is CE certified for safety and electromagnetic compatibility.

- **Dimensions & Weight** – **60 × 45 × 26 mm** (Width × Height × Depth) – roughly the size of a matchbox, easily fitting in meter cabinets. Weight is approximately **120 g**.

- **Indicator** – Multi-color status LED for device status (red/yellow/green, various blink patterns). See LED Status Indicators for details on LED signals and what they mean.

- **Button** – One multi-function button for mode switching (Bluetooth, WPS, AP mode) and resetting (details in LED Status Indicators).

- **Integrations** – Native support for whatwatt cloud platform, **myStrom**, and **Solar Manager** services, as well as standard **MQTT** for integration with local systems. Additional integrations (e.g., utility company portals, custom smart home platforms) can be enabled via open APIs. For example, integration with **Home Assistant** or other open-source smart home systems is possible using **MQTT** or **REST API**.

- **Firmware** – User-upgradeable firmware (updates provided by manufacturer via support website or remotely by cloud). The device's firmware version can be checked in the WebUI (System section).

- **Warranty** – 2-year manufacturer warranty from date of purchase, covering hardware defects under normal use. (Refer to warranty statement or terms for details and claim process.)

Technical note – Operation solely via meter power is possible under most conditions (the device is designed to be energy-efficient). In scenarios with limited meter power, intensive use of integrations (local REST API, MQTT), WebUI panel or weak Wi-Fi signal, the device may temporarily shut down. If you encounter such limitations, use the USB-C power input as described in Powering via Meter Interface only.

5. Smart Meter Compatibility

whatwatt Go is compatible with all common smart electricity meters that provide a **P1**, **M-Bus**, **Kamstrup** or **pMEP** type customer interface. It has been tested with smart meters from major manufacturers including **Ensor**, **Iskraemeco**, **Kamstrup**, **Landis+Gyr, Sagemcom**, **Semax**, **NES**, and **Meter+Control.** This broad compatibility means that if your meter adheres to standard protocols (DSMR, IEC 62056, etc.), whatwatt Go can likely read it.

Key compatibility details:

- **Ensor** – Models eRS301, eRS801: Supported out-of-the-box (connect via RJ12 cable).

- **Iskraemeco** – AM550: Supported out-of-the-box via RJ12.

- **Landis+Gyr** – E360 (P1 interface via RJ12) and E450 (S4/S5)/E570 (M-Bus interface): Supported out-of-the-box.

- **Sagemcom** – S211, T211 (P1 over RJ12) and S210, T210-D (M-Bus RJ12): Supported out-of-the-box.

- **Kamstrup** – Omnipower, Omnia series: Supported with adapter. These meters use a proprietary interface; a **Kamstrup adapter** (whatwatt accessory) is required for whatwatt Go to interface with them.

- **Semax/Elster** – AS3000 (AM540): Supported with adapter. A **Semax P1 adapter** is required for these meters.

- **Meter+Control** – Flexy: Supported out-of-the-box via RJ12.

- **NES** (Networked Energy Services) – 83335-3 (Gen 5): Supported out-of-the-box via RJ12. 83332-3 (Gen 3), 83334-3 (Gen 4): Supported with adapter. These meters use a proprietary interface; a **NES adapter** (whatwatt accessory) is required for whatwatt Go to interface with them.

- **Kaifa** – MA309M (M-Bus): Supported out-of-the-box via RJ12.

- **Others** – Many other meters adhering to DSMR or IEC standards will work. The device auto-detects interface type and protocol in most cases.

Note – Some meters may require enabling the customer port or requesting an encryption key from your energy provider. If your meter's port is disabled by default, contact your energy provider to activate it. If the data is encrypted, your provider should supply the decryption keys (see Meter Section on entering meter keys).

For the latest list of tested compatible meters and any required adapters, refer to the manufacturer's compatibility list or website. If your meter is not explicitly listed but uses a standard P1 or M-Bus interface, it is likely supported. When in doubt, consult whatwatt support with your meter's make and model.

6. System Requirements

To use whatwatt Go effectively, ensure you have the following prerequisites:

- **Active Network** – A functioning Wi-Fi network (2.4 GHz) or an available LAN port on your router/switch. Internet access is required if you plan to use cloud services or remote monitoring, though local operation (for local integrations) can work without internet. The Wi-Fi network should use one of the supported security modes (open/WPA2/WPA3).

- **Smart Meter with Data Port** – A smart electricity meter equipped with an enabled customer interface port (RJ12 connector for P1 or similar, port/terminals for M-Bus, pMEP or Kamstrup interface). See Smart Meter Compatibility. The port should be activated/configured to output data. If the meter requires an encryption key for data, have that key ready (provided by your energy provider).

- **Power Source** – In most cases, the meter's port provides power to whatwatt Go. However, if your meter cannot power external devices or if you experience issues, you will need a standard USB power adapter (5 V DC, at least 0.5 A) to power the device via the USB-C cable.

- **Device for Setup**
  A smartphone, tablet, or computer is needed for configuration. For initial setup, you can use:

  - A smartphone with **whatwatt mobile app** (for Bluetooth setup), OR

  - Any Wi-Fi enabled device with a **web browser** (for connecting to the device's Wi-Fi or to its IP on your network).

- **Web Browser** – A modern web browser (Chrome, Firefox, Safari, Edge, etc.) for accessing the WebUI. No special software is required aside from the optional mobile app for Bluetooth setup.

- **Optional Services** – If you plan to use the whatwatt cloud or third-party cloud integrations (like myStrom or Solar Manager), you may need to create accounts with those services or have an active subscription. (For example, some advanced features or data storage in cloud might require a subscription as noted by the service provider.) The whatwatt mobile app and cloud may require a free registration on the whatwatt platform.

- **Compatible Integration Platforms (optional)** – If integrating with a smart home system (e.g., Home Assistant, openHAB, Node-RED), ensure those platforms are set up and reachable on the same network, or have an MQTT broker accessible if using MQTT.

In summary, you should have a network and a smart meter ready, along with a device to perform the configuration. If all requirements are met, the setup process will be straightforward and quick.

7. LED Indicators and Button Operations

whatwatt Go uses a single multi-color LED and one button to convey status information and accept user input. Understanding these indications will help in both setup and troubleshooting. Below is an overview of the button functions and LED status codes:

7.1. Button Operations

The physical button on whatwatt Go allows you to initiate different modes. Pressing or holding the button for specific durations triggers these functions:

- **Short Press (0.5 second)** – Bluetooth Pairing Mode: A quick press (about half a second) puts the device into Bluetooth pairing mode. This is used for connecting the whatwatt mobile app to the device for initial configuration. When activated, the LED will turn **solid yellow**, indicating Bluetooth mode is active. (This mode will automatically time out after ~10 minutes if no pairing occurs.)

- **Medium Press (3 seconds)** – WPS Mode – Holding the button for about 3 seconds triggers **WPS** (Wi-Fi Protected Setup) mode. The LED will start **flashing yellow**, indicating WPS pairing is active. In this mode, within 2 minutes you should press the WPS button on your Wi-Fi router to securely connect whatwatt Go to your Wi-Fi network without entering a password. If successful, the device will obtain the Wi-Fi credentials from the router. (WPS mode also automatically stops after 2 minutes if no connection is made.)

- **Long Press (6 seconds)** – Access Point (AP) Mode: Holding the button for ~6 seconds will switch the device to **Access Point mode**, where it creates its own Wi-Fi network for direct configuration. The LED will show an **alternating yellow/red** pattern when AP mode is enabled. In AP mode, the device's Wi-Fi network name (SSID) will be of the form "whatwatt-XXXXXX" (with XXXXXX being part of the device ID on the label), and the password for this network is printed on the QR code label (typically labeled "PW"). You can connect to this network with a phone or laptop to access the WebUI (at http://192.168.254.1). AP mode will shut off automatically after 10 minutes of inactivity or if the device is configured and rebooted.

- **Very Long Press (10–20 seconds)** – Factory Reset: Holding the button down for 10 seconds or more triggers a factory reset of the device. The LED will start **alternating green/red** to indicate that factory reset is in progress. Release the button after you see this pattern. The device will erase all user settings (including Wi-Fi credentials, integrations, etc.) and return to factory defaults. After reset (which takes around 10 seconds), the device will reboot and the LED will go to blinking red (as if it were a brand new device). **Use with caution** – A factory reset cannot be undone, and you'll need to set up the device again from scratch. (See Factory Reset for details on factory reset.)

7.2. LED Status Indicators

DEVICE STATUS	LED
OK / connected to cloud	🟢
Meter not recognized	🔴
WiFi problem	🟢🟡
Not configured / LAN problem	🔴⚫

MODES	BUTTON PRESS	LED
Reset	10 s	🟢🔴
WPS Mode	3 s	🟡⚫
Access Point Mode	6 s	🔴🟡
BLE Config	0.5 s	🟡

The LED on whatwatt Go can display various colors and blink patterns to communicate the device's current state. Below are the possible LED indications and their meanings:

- **Blinking Red** – The device has **no network configured**. This is shown when Wi-Fi is not set up and no Ethernet connection is active. In other words, the device is in an initial state, waiting for configuration. (If you see this after setup, it means it lost Wi-Fi connection and isn't on LAN.)

- **Solid Yellow** – **Bluetooth pairing mode** is active. The device is waiting for the mobile app to pair via BLE. This mode times out after 10 minutes if not paired.

- **Flashing Yellow** – WPS mode is active. The device is attempting to connect to a router via **WPS** (push-button Wi-Fi setup). This times out after 2 minutes if not successful.

- **Alternating Yellow/Red** – **Access Point (AP) mode** is enabled. The device is broadcasting its own Wi-Fi network (for direct configuration). In this state, use a Wi-Fi device to connect directly to whatwatt Go's network (see Method 3: Access Point (AP Mode) via Web Interface). AP mode lasts up to 10 minutes then stops automatically if no one connects.

- **Alternating Yellow/Green** – The device is currently **connecting to a Wi-Fi network** (after credentials have been entered or WPS used). It indicates the Wi-Fi client is in process of associating with your router. If this persists for more than a minute or two, it might be having trouble connecting (e.g., wrong password).

- **Blinking Green** – The device has successfully connected to a Wi-Fi network but is **not connected to the cloud**. Essentially, local network is okay, but whatwatt cloud service is not reachable or not enabled. If you are not using the cloud feature, this may be normal. If you intend to use cloud and it stays blinking green, check internet access. (If blinking green continues indefinitely and you're unsure of the network settings, you might consider resetting Wi-Fi settings via the button or WebUI and reconfiguring.)

- **Alternating Green/Red** – A **factory reset** is in progress. You will see this pattern after holding the button for 10 seconds. It lasts about 10 seconds while the device wipes settings, then the device will reboot.

- **Solid Red** – The device is connected to the network (cloud link is okay) but there is a **problem with meter communication**. In this state, the network is fine but no data is coming from the meter. Possible causes for solid red include: the RJ12 cable is unplugged or faulty, the meter's interface is disabled, the meter is not configured to send data, the meter type is not recognized, or the meter requires an encryption key that hasn't been entered. Essentially, the device cannot read the meter. Check the physical connection and meter settings when you see solid red.

- **Solid Green** – Everything is **working properly**. The device has network connectivity (and cloud connectivity if enabled) and is successfully communicating with the smart meter. This is the normal "operation" state when setup is complete and data is flowing.

These LED codes serve as a quick reference to understand what whatwatt Go is doing at any given time. Keep this list handy during setup and everyday use. If the LED shows an unexpected color, refer back to this list to identify the status.

8. Initial setup

- Before connecting the power supply to the device, attach the antenna. Do not unscrew or attach the antenna while the device is already working, because during startup the device performs calibration of the radio path.

- If you are using a MicroSD card, it must be formatted in FAT32 format beforehand. New tabs are usually formatted.

- The device will not start when powered solely by the meter if WiFi connectivity has not been configured. This also means that the Ethernet interface is not active when powered solely by the meter.

8.1. Network Configuration

After installing the hardware, the next step is to connect whatwatt Go to your home network. There are two primary ways to network the device: via wired Ethernet (LAN) or via Wi-Fi. This section describes both, as well as multiple options for configuring Wi-Fi.

8.1.1. Connecting via Ethernet (LAN)

If you plan to use a wired network connection, setup is very simple:

- **Plug in the Ethernet Cable** – Connect one end of a standard Ethernet (RJ45) cable to the LAN port on whatwatt Go, and the other end to an available port on your router or network switch.

- **Automatic IP (DHCP)** – By default, whatwatt Go is configured to obtain an IP address automatically from your network's DHCP server (usually your router). There's nothing else you need to do if your network has DHCP (almost all do). The device will be recognized as a new client and assigned an IP.

- **LED Indicator** – Once the LAN cable is connected and the device has an IP, the LED should eventually change from blinking red to either blinking green or solid green, depending on cloud connectivity (see LED status above). If it remains blinking red, the device might not be getting an IP – check that your router's DHCP is enabled and the cable is firmly connected.

- **Configuration** – You can now skip to Accessing the Web Interface (WebUI) to find the device on your network and proceed with further configuration if needed. Typically, if using LAN, you might not need to configure Wi-Fi at all (unless you want dual connectivity or to switch to Wi-Fi later).

- **Advanced IP Settings** – The WebUI allows setting a static IP or custom hostname for the device if desired, but this is optional. In most cases, leaving DHCP enabled is recommended for simplicity.

Using Ethernet is often the quickest way to get online, especially if the device is installed near your router or a network outlet. Once connected, all other features (WebUI, data forwarding) are accessible.

8.1.2. Connecting via Wi-Fi

If you prefer to use Wi-Fi (WLAN) for networking, whatwatt Go offers three methods to configure the Wi-Fi credentials:

8.1.2.1. Method 1: Bluetooth (Mobile App Setup)

This is the **most user-friendly** method using the whatwatt smartphone app:

1. **Enable Bluetooth Mode** – On whatwatt Go, press the button briefly (0.5s). The LED should turn solid yellow, indicating Bluetooth pairing mode is active.

2. **Use the Mobile App** – Install and open the whatwatt Go mobile app on your Android or iOS device. The app will guide you to add a new device. It should detect the whatwatt Go via BLE. Follow the in-app instructions (usually, you select the device from a list of nearby Bluetooth devices).

3. **Provide Wi-Fi Details** – The app will prompt you to choose one of your Wi-Fi networks and enter the Wi-Fi password. Input the credentials of the 2.4 GHz Wi-Fi network that you want whatwatt Go to join.

4. **Transfer Settings** – The app will send these network credentials to whatwatt Go securely via Bluetooth.

5. **Connection** – After sending the details, whatwatt Go will attempt to connect to the Wi-Fi. The LED will switch to alternating yellow/green (connecting) then to blinking green or solid green once connected (depending on cloud status). The mobile app should indicate when the process is successful.

6. **Completion** – The device should now be on your Wi-Fi network. You can proceed to Accessing the Web Interface (WebUI) to access the Web Interface (the app may also offer to take you directly to the device's page or provide its IP/hostname).

This method requires the least technical steps, as the app handles scanning and connecting. Ensure your phone is close to the device during this process and that Bluetooth is enabled on your phone.

8.1.2.2. Method 2: WPS Push-Button Configuration

WPS (Wi-Fi Protected Setup) lets you connect without typing a password, if your router supports it:

1. **Enable WPS Mode** – Press and hold the whatwatt Go button for about 3 seconds until the LED starts flashing yellow. The device is now in WPS mode.

2. **Activate Router WPS** – Within 2 minutes, go to your Wi-Fi router and press its WPS button (typically a physical button on the router, sometimes labeled with the WPS symbol or "WPS"). This tells the router to accept new devices.

3. **Automatic Exchange** – The router and whatwatt Go will communicate and the router will send the Wi-Fi credentials to the device automatically.

4. **Connection** – If successful, the whatwatt Go LED will change — first to alternating yellow/green (connecting) then to blinking green (if it connected to Wi-Fi but not cloud) or solid green (if also cloud-connected). This indicates it joined your Wi-Fi. If the LED returns to blinking red after WPS, the attempt failed (possibly the 2-minute window elapsed or a router issue); you can try again or use another method.

5. **Confirmation** – Check your router's client list or use Accessing the Web Interface (WebUI) to find the device on the network. WPS doesn't provide immediate feedback beyond the LED, but if the LED is green, the connection is established.

Note: WPS is convenient but some routers have it disabled for security reasons. Also, ensure you press the WPS on the correct Wi-Fi (2.4 GHz network on dual-band routers).

8.1.2.3. Method 3: Access Point (AP Mode) via Web Interface

This method doesn't require any app or special router feature; it uses a direct Wi-Fi connection to the device:

1. **Enable AP Mode** – Press and hold the whatwatt Go button for ~6 seconds until the LED starts alternating yellow/red. The device is now in Access Point mode and is broadcasting its own Wi-Fi network.

2. **Find the Device's Network** – Using a smartphone or laptop, go to your Wi-Fi settings and look for a network named "**whatwatt-XXXXXX**" (where XXXXXX are the last 6 characters of the device's ID as printed on its label). For example, it might appear as "whatwatt-9F8124" or similar.

3. **Connect to Device AP** – Join that network. When prompted for a password, enter the password found on the device's label (the label near the QR code has a field "PW" which is the Wi-Fi password for AP mode). After a moment, your device should connect to the whatwatt Go's Wi-Fi network.

4. **Access WebUI** –While connected to the whatwatt-XXXXXX network, open a web browser and go to **http://192.168.254.1**. This is the default address for the device's local web interface in AP mode. You should see the whatwatt Go WebUI (no internet needed for this step since you are directly connected).

5. **Enter Wi-Fi Credentials** – The WebUI will present the main page, and you can navigate to the WiFi configuration section. Provide the SSID (network name) and password of your home Wi-Fi that you want whatwatt Go to connect to. (There is a dedicated WiFi/LAN Section — where you can scan for networks or enter the details manually).

6. **Apply and Reboot** – Save the Wi-Fi settings. Once it applies the new settings, it will disconnect from AP mode. Your phone/laptop will lose connection to the whatwatt network (as the AP shuts off). The LED on whatwatt Go will go through the connecting sequence (alternating yellow/green, then hopefully blinking green or solid green).

7. **Reconnect to Home Network** – Switch your phone/laptop back to your normal home Wi-Fi. The whatwatt Go should now be connected to the same network. Proceed to Accessing the Web Interface (WebUI) to find its IP or hostname to access it on your network.

AP mode will turn itself off after 10 minutes if no activity, but since we applied settings it turned off immediately. If you need to try again, you can re-enable AP mode with the button.

This method is essentially manual but doesn't require installing an app. It's useful if WPS is not available and if you prefer not to use Bluetooth.

Tip – Only one of these methods is needed. You can choose the one you're most comfortable with. Once the device has your Wi-Fi credentials stored, it will automatically connect to your Wi-Fi each time it powers on (no need to repeat these steps unless your Wi-Fi network changes or you factory reset the device).

8.2. Accessing the Web Interface (WebUI)

The whatwatt Go hosts a built-in web interface (WebUI) for configuration and monitoring. After connecting the device to your network (via Wi-Fi or LAN), you'll use this interface for all further setup. Here's how to access it:

8.2.1. Finding the Device on Your Network

You need to determine the IP address or hostname of whatwatt Go now that it's connected.

- If you used AP mode in the previous step and just entered Wi-Fi details, you were already on the WebUI at 192.168.254.1 to configure it. After the reboot, that address no longer works (since the device is now on your home network, not in AP mode). You'll need to reconnect to your home Wi-Fi and find the new address.

  If the device is connected to your home network (Wi-Fi or LAN) use one of these methods to find it:

  - **Router's DHCP Client List** – Log in to your Wi-Fi router's admin interface (usually via a browser to 192.168.x.1). Find the list of connected devices or DHCP leases. Look for an entry that might be named "whatwatt-XXXXXX" or similar. Note the IP address (e.g., 192.168.x.y).

  - **mDNS/Bonjour** – The device advertises a hostname using mDNS. On many systems, you can reach it by a name like **whatwatt-XXXXXX.local**, where "XXXXXX" are the last 6 characters of its ID (found on the label). For example: whatwatt-9F8124.local. Try typing this into your browser's address bar. (This method works on Windows 10/11 (if Bonjour is present), Mac, and Linux, etc., especially if you have iTunes or other Apple software installed on Windows to support .local resolution.)

- **Default Hostname** – Alternatively, the device may also be reachable at **http://whatwatt-XXXXXX** (without ".local") depending on your router's DNS settings. Some routers will map the hostname to IP in the local DNS. Again, XXXXXX is from the device ID.

- **Mobile App** – If you used the mobile app for setup, the app might show you the device and allow you to open the WebUI from there. This can save you the trouble of finding the IP manually.

- Once you have the IP address or resolved hostname, enter it into your web browser (e.g., http://192.168.0.105 or http://whatwatt-9F8124.local). You should see the whatwatt Go WebUI login page or home page.

8.2.2. Logging In

By default, the WebUI does **not require a password** for initial access. If you haven't set any credentials yet, it should log you in automatically or after a simple prompt. (In the factory state, there's typically no username/password; user management is done later in System settings.) If you have enabled the WebUI password (see System Section or User Management & Access Control), then when accessing the interface you'll be prompted to enter that password. Enter the password you set; leave the username field blank (the device doesn't use a username for login, only a password).

After successful access, you will see the WebUI, which is an overview page with multiple sections or "tiles" (WiFi/LAN, Integrations, System, MQTT, Meter, Live, etc.).

You are now ready to use the Web Interface to configure and monitor your whatwatt Go. The Web Interface Guide section will guide you through the structure and options available in the WebUI.

9. Installation

This section guides you through installing the whatwatt Go hardware, connecting it to power and your meter, and performing the first-time setup.

9.1. Wiring and Power Connections

Follow these steps to connect whatwatt Go to your smart meter and power source:

1. **Mount the Device** – First, decide how you will mount the device near your meter. You can attach it using the magnet (to the meter box or DIN rail) or screw the magnet adapter to a surface and snap the device onto it. Ensure the device is close enough to reach the meter's port with the RJ12 cable, and ideally in a location where the Wi-Fi signal is decent (if using Wi-Fi).

2. **Connect the Antenna** – Screw the provided Wi-Fi antenna onto the SMA connector on whatwatt Go (if not already attached). Hand-tighten it until snug. Orient the antenna vertically for best signal reception.

3. **Connect to the Meter** – Take the **RJ12 cable** and plug one end into the **smart meter's data port** (often labeled as P1, HAN, or similar). Plug the other end into the RJ12 port on whatwatt Go. The connector is keyed – make sure it clicks in place. **Warning** – Only connect to the designated data port of the meter. Do not plug into any port not intended for customer use.

4. **Connect USB Power (if needed)** – If you know that your meter's port provides power, you may initially power the device from the meter connection alone. However, for the first setup or if you are unsure, it's recommended to connect the **USB-C cable** from whatwatt Go to a USB power adapter (5V). Plug the adapter into a wall outlet. This ensures the device has sufficient power during setup (especially if Wi-Fi signal might be weak in the location or many integrations are using). The device can operate with **either** meter power or USB power, or both – it will automatically prioritize and draw from USB if available.

5. **Power On** – If using USB, turn on the power supply. If using only the meter's power supply, the device should take up to 10 minutes to power up after being connected to the meter port (assuming the meter port is active). The whatwatt Go does not have a physical power switch; it starts up when power is applied.

6. **Boot Sequence** – Observe the **LED indicator** on the device. During the initial startup, the LED will go through a sequence. Typically, you may see a **blinking red** LED at first – this indicates that network configuration has not yet been done (and no Ethernet cable detected), which is expected for a brand new device. The device is now powered and ready for configuration.

Ensure cables are neatly routed to avoid any strain or tripping hazards.

9.2. Powering via Meter Interface Only

One of the key features of whatwatt Go is that it can draw power from the meter's port itself, eliminating the need for an external power supply. However, when using **meter-interface power only**, there are a few important considerations:

- If the device is powered solely from the meter and **Wi-Fi is not yet configured**, the device's doesn't boot. It's recommended to either configure Wi-Fi (using one of the methods in Connecting via Wi-Fi) or temporarily use USB power during initial setup.

- When running on meter power only, the **Ethernet LAN interface is disabled** to save power (since powering the Ethernet controller could exceed the limited power budget from the meter). This means you cannot use the wired LAN when no USB power is connected. If you require Ethernet, you must plug in USB power.

- **Firmware Updates** – Certain meters (e.g., Kamstrup) provide very limited power. In such cases, performing a firmware upgrade while on meter power might not be possible. It is recommended to connect USB power before attempting a firmware update, to ensure the device has enough power and doesn't shut down mid-update.

- If the Wi-Fi signal is weak or unstable, the device might consume more power trying to maintain the connection. On meter power alone, this could lead the device to temporarily shut down. If you notice the device rebooting or disconnecting frequently when only meter-powered, it's likely due to

insufficient power for the conditions. The solution is to improve Wi-Fi signal (relocate antenna or device) or use the USB-C power supply for additional power.

- **Best Practice** – It's often easiest to perform initial setup with USB power connected (ensuring all features like Wi-Fi and Ethernet are active), and then once everything is configured and working, you can **try running on meter power alone**. Monitor the stability. If it runs fine (solid green LED, etc.), you can continue without USB. If not, keep the USB power connected for reliable operation.

In summary, while whatwatt Go is designed to run without external power, real-world conditions (especially networking) can sometimes necessitate using the USB-C power. Always prioritize a stable connection and device operation over the convenience of one less cable.

10. Web Interface Guide

The WebUI (Web User Interface) of whatwatt Go is the primary control panel for the device. It allows you to view status information and configure all settings. In this section, we break down the WebUI into its main sections and describe each.
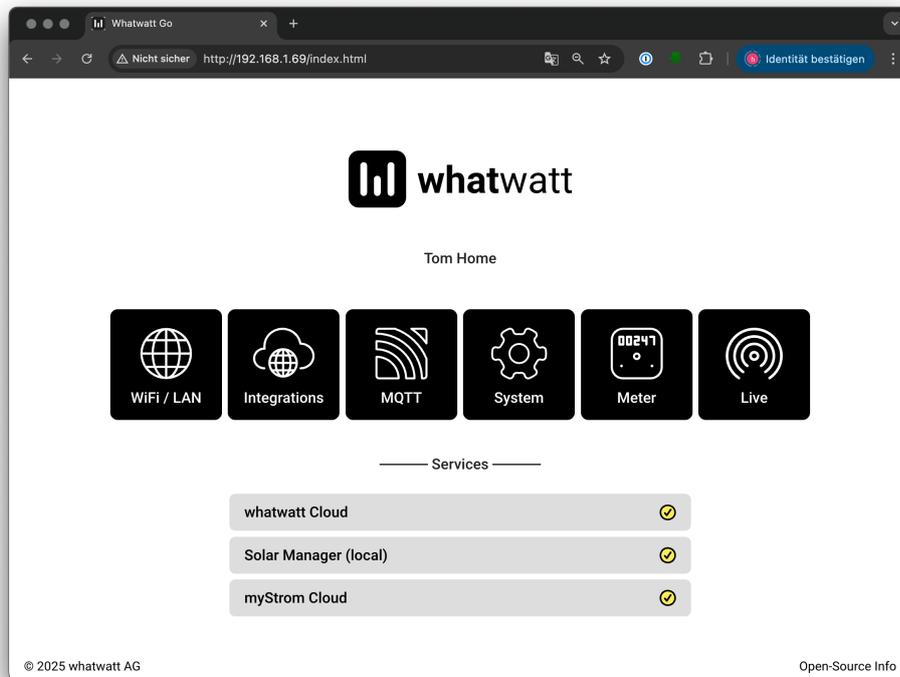
When you log into the WebUI, you will typically see a dashboard or menu with the following main sections (often represented as tabs or buttons):

- **WiFi/LAN** – Shows the current network status and allows configuration of network settings.
- **Integrations** – Configuration for various data integrations (whatwatt cloud, myStrom, Solar Manager, etc.).
- **System** – General system information and maintenance (device info, firmware updates, reboot, etc.).
- **MQTT** – Settings for MQTT client if you are using an MQTT broker to receive data.
- **Meter** – Information about the meter connection and reading parameters (interface, status codes, etc.).
- **Live** – Real-time data readings from the meter (current power, voltage, energy usage, etc.).

These sections correspond to different aspects of the device's functionality. The interface is designed to be intuitive: selecting a section will display a page with relevant status information and configurable options for that category.

Below, we describe each section in detail, including key fields and how to use them.

10.1. WiFi/LAN Section

The **WiFi/LAN section** provides details on the device's network connection and allows you to modify network settings.

When viewing this section, the information displayed will depend on whether you are using Wi-Fi or LAN:

- If connected via **Wi-Fi**, it will show Wi-Fi status and details.
- If using **Ethernet LAN**, it will show LAN status (and may also still show Wi-Fi settings if Wi-Fi is enabled or can be configured).

10.1.1. Status Information

- **Status** – Indicates the status of the network connection. For Wi-Fi, it might show the SSID or connection state (e.g., "connected / OK"). For LAN, it might simply indicate the link status. An "OK" status generally means the device is successfully connected to the network.

- **Wi-Fi Signal Strength** – If on Wi-Fi, shows the signal strength as a percentage. 100% means excellent signal, lower values indicate weaker signal. (If using LAN, this may not be applicable.)

- **IP Address (IP)** – The IP address currently assigned to whatwatt Go on your network. This is the address you are using to access the WebUI. It's usually assigned via DHCP or could be static if you set it.

- **Subnet Mask (Subnet)** – The subnet mask of the network (e.g., 255.255.255.0). This defines the network's address range.

- **Gateway** – The IP address of the network gateway (typically your router). This is used for any outbound connections to the internet or other networks.

- **MAC WiFi / MAC Ethernet** – The MAC address (hardware address) of the Wi-Fi interface and Ethernet interface respectively. These are unique identifiers for the device's network interfaces. You might use these to create DHCP reservations on your router if desired.

- **Security** – For Wi-Fi, this shows the type of Wi-Fi security being used (e.g., WPA2/WPA3).

- **Hostname** – The hostname of the device on the network. By default, it's something like "whatwatt_XXXXXX" or "whatwatt-XXXXXX" as noted. If you change this, you will need to reboot for it to take effect (and note that your method of accessing via name will change).

10.1.2. Configuration Options

- **Modify WiFi Settings** – An option to change the Wi-Fi network or credentials. Clicking this might allow you to scan for available networks or manually input a new SSID and password. This is useful if you need to connect to a different Wi-Fi or update the password (without doing a full factory reset). Changing Wi-Fi settings will typically reboot or temporarily disconnect the device from the current session, so use with care.

- **Start WPS** – This allows you to initiate WPS from the WebUI (similar to the physical button method). If you click "Start WPS", the device will go into WPS mode (flashing yellow LED) and you then press your router's WPS button. This is an alternative to pressing the device's physical button.

- **Reset WiFi Settings** – This will clear the saved Wi-Fi configuration and disable Wi-Fi. Use this if you want to revert the device to AP mode or move it to LAN only. Note that if you reset Wi-Fi while on Wi-Fi, you will lose connection and might have to use AP mode or LAN to reconnect. It essentially puts the device back to a "no Wi-Fi configured" state (blinking red LED if no LAN).

- **LAN Settings** – If the device is on LAN or has a LAN capability, you might see options to set a static IP, subnet, gateway, and DNS. By default, **DHCP is enabled** (this is recommended unless you have a specific networking scenario). You can switch to static IP by filling in the details. Only advanced users should do this – if you set it incorrectly, the device might not be reachable at the expected address.

For most users, once the device is connected to Wi-Fi or LAN, there's no need to change these settings frequently. However, it's good that the WebUI provides full control if needed (for instance, moving the device to a new Wi-Fi network or troubleshooting connectivity).

10.2. Integrations Section

The **Integrations section** is where you configure which external systems or services will receive data from whatwatt Go. This allows the device to send your meter data to cloud services or local endpoints.

Within this section, you will see options for various integration targets, typically including:

- **whatwatt (cloud)** – The official whatwatt cloud service. There may be a toggle to enable sending data to the whatwatt cloud platform. If enabled, your device will periodically send data to whatwatt's servers so you can view it in the whatwatt mobile app or web dashboard. Ensure your device has

internet access for this to work. By default, this might be enabled (since the idea is many users will use the app). You can disable it if you prefer not to use the cloud.

- **myStrom (cloud)** – An option for users of the myStrom energy ecosystem. If you have a myStrom account or hardware, enabling this would integrate your meter data into that system.
- **Solar Manager (cloud)** – A service for solar energy monitoring/management. If you use Solar Manager, you can enable this to feed your production/consumption data to that service. Again, you may need an account or token from Solar Manager to connect.
- **MQTT (local)** – (This might be covered in its own section, see MQTT Section, but some integration page might mention it.) MQTT is a protocol for sending data to a local broker for home automation systems. The integration section may just have a reference or link to the MQTT settings (which are detailed separately).
- **REST API (local)** – Possibly an option to enable a RESTful API endpoint on the device, so that local systems can poll data. The UI might have a note or link about how to use the REST API if available (this might not require configuration beyond enabling). This option needs to be enabled if you want to integrate with **Loxone**.
- **Other** – The device might support additional integrations or have placeholders for future integrations (for example, "Energy Supplier" or other partner platforms, as hinted by "Integrations on Request").

For each integration, you typically have some controls:

- **Enabled** – a toggle or checkbox to enable/disable sending data to that integration.
- **Configuration** – some integrations might require configuration (for example, MQTT requires broker address, which is done in the MQTT section; cloud integrations might require login or region selection, etc.). The integration section might simply list them and toggles, or provide basic fields if needed.

For instance, enabling **whatwatt (cloud)** just requires toggling it on (assuming the device is already linked to your whatwatt account via the app). Enabling **Solar Manager** might prompt for an API key or site ID, etc.

Make sure to only enable the integrations you plan to use. If you're only using local MQTT and not the cloud, you can turn off the cloud integrations to reduce network usage. The device can send data to **multiple** destinations simultaneously, so you could use the cloud and MQTT at the same time if desired.

10.3. MQTT Section

The **MQTT section** is dedicated to configuring MQTT parameters for sending data to an MQTT broker (often used for home automation platforms like Home Assistant, OpenHAB, Node-RED, etc.).

If you enable MQTT, whatwatt Go acts as an **MQTT client** that publishes meter readings to a topic on your broker. Here are the typical interface elements and their meaning:

- **Enabled** – A switch to turn the MQTT client on or off. When enabled, the device will attempt to connect to the specified MQTT broker and begin publishing data. If disabled, it will not use MQTT at all.
- **URL** – The address of your MQTT broker. This could be an IP address or hostname. It should start with a protocol indicator: use mqtt:// for unencrypted connections (default MQTT on port 1883) or mqtts:// for SSL/TLS encrypted connections (MQTTS on port 8883, typically). For example: mqtt://192.168.1.50:1883 or mqtts://broker.example.com:8883. If you omit the port, it will use default ports.
- **Username / Password** – If your MQTT broker requires authentication, enter the username and password here. If your broker is open with no auth, leave these blank.
- **Client ID** – The MQTT client identifier. This is how the broker will identify the whatwatt Go device. It's often safe to leave as the default (which might be auto-filled, possibly the device ID). If you have multiple whatwatt Go devices, ensure each has a unique Client ID.
- **Publish Topic** – The MQTT topic to which whatwatt Go will publish data. For example, it could be something like home/energy/whatwatt. You might want to set a topic that fits your MQTT topic scheme. Ensure it doesn't clash with other devices.
- **Payload Template** – The format of the data payload that whatwatt Go will send in each MQTT message. The device uses placeholders (variables) like ${power} ${energy} etc. to construct the

message.. The UI might have a default template pre-filled. For example, it might publish a JSON with fields for power, voltage, etc. The manual indicates variables in ${} are used. Unless you have specific needs, using the default template is recommended. Advanced users can modify it to match the format needed by their systems.

- **Publish Interval** – (Not explicitly listed above, but mentioned in System as "Interval to Systems") This might be configured in System or MQTT section. It determines how often to send data via MQTT (in seconds). By default, it might send every few seconds or at the meter's reading interval. You can adjust it to reduce network traffic (at the cost of less granular data). Note that the device won't publish faster than the meter provides data, regardless of the interval setting.

Once configured, use your MQTT client (e.g., Home Assistant's MQTT integration or an MQTT subscriber tool) to verify that data is being published to the topic. The data format will depend on the template – refer to documentation or the default to understand the message content. Typically it will include current power, energy counters, etc., possibly in a JSON format.

For more information on template variables and advanced MQTT usage, consult the whatwatt Go data-sheet or user forum for examples (the manual suggests referring to the data-sheet for possible variables in the payload template).

10.4. System Section

The System section contains general device information and maintenance operations. It's like the "About and Utilities" page for your whatwatt Go. Here's what you can find and do in this section:

10.4.1. Device and Network Information

- **SmartMeter ID** – The identifier of the connected meter (if the meter provides one). Not all meters will show an ID; if blank or "unknown", it's normal for certain models.
- **Name** – The user-defined name of your whatwatt Go device. You can set a friendly name (e.g., "House Meter" or "Shop Meter") to distinguish if you have multiple devices. This might also reflect in the mobile app or in MQTT topics if used. You can usually edit this field and save to rename the device.
- **Meter Type** – Detected type of meter (if the meter reports it). Some meters might not report a type, so it could be blank or a generic descriptor.
- **Interface** – The type of physical interface currently in use between whatwatt Go and the meter (e.g., "P1", "M-Bus", "TTL"). The device often auto-detects this.
- **Meter Status** – The status of meter communication. This might echo what is seen in the Meter Section with values like "OK" or error states. If it's not "OK", check the Meter Section for details on what issue is present (e.g., "Not connected", "Key required", etc.).
- **Connection / Status** – Indicates how the device is connected to your network (WiFi or Ethernet) and the status of that connection. Something like "WiFi / Connected" or "Ethernet / Connected".
- **IP** – The IP address of the device (same as in WiFi/LAN Section).
- **Subnet, Gateway** – Network info (same as in WiFi/LAN Section).
- **MAC WiFi, MAC Ethernet** – MAC addresses (also in WiFi/LAN Section).
- **Interval to Systems** – The interval (in seconds) between data transmissions to external systems. Currently this applies to MQTT publishing frequency. For example, if set to 10, the device will publish data every 10 seconds (if new data is available and the meter provides data that frequently). Adjusting this can throttle how often data is sent to MQTT or cloud.
- **Device Protection (Password)** – This option allows you to set a WebUI access password. If enabled, you'll be prompted to enter a new password (and possibly confirmation). Once set, the WebUI will require this password for future access. As noted, when logging in you don't need a username, only the password (the username field can be left blank). It's recommended to set a password to prevent unauthorized changes if your network is shared. If you forget the password, you may need to factory reset to clear it, so keep it safe.
- **Model** – The model identifier of the device. For whatwatt Go, this could show something like "WW_Go_..." plus a hardware revision. Mostly for reference.

- **Firmware** – The current firmware version running on the device. **Important to note** – You might need it when checking for updates or troubleshooting with support.

10.4.2.System Actions (Sub-options)

- **Firmware Upgrade** – This provides a way to update the device's firmware. When you click this, it allows you to upload a firmware file (which you must obtain from whatwatt's website). The steps are: download the latest firmware file from the official site, click Firmware Upgrade, choose the file, then confirm to start the upgrade. The device will upload the file and then flash it. **Do not power off the device during a firmware update**. It will reboot automatically when done. (Ensure you have USB power if meter power might be insufficient for the upgrade process – see Powering via Meter Interface Only.)

- **Reboot** – A simple restart of the device. This is equivalent to power cycling. It's useful to apply certain settings or if the device is behaving oddly and you want to see if a reboot fixes it. Clicking Reboot will disconnect you; you can reconnect after about 30 seconds.

- **Reset to Factory Settings** – This triggers a factory reset from the WebUI (same result as the 10s button press). It will ask for confirmation, as it will erase all user settings and credentials. After confirming, the device will wipe settings and reboot to default state (AP mode). Use with caution. (If currently on Wi-Fi, note that you will lose connection once it resets, because it wipes the Wi-Fi config.)

10.4.3.Other info

- **Date/Time** – The current date and time according to the device. The device syncs time via NTP when internet is available. If the time is wrong, check internet connectivity or that your firewall isn't blocking NTP.

- **Last Reboot** – How long ago the device last rebooted (uptime), which can be shown in hours or a timestamp of last reboot.

Use the System section to keep an eye on the device's vital info and perform maintenance tasks. It's a good practice to check for firmware updates periodically and keep the device up-to-date for the latest features and fixes.

10.5.Meter Section

The **Meter section** provides detailed information and configuration related to the smart meter that whatwatt Go is reading. This is where you can see if the meter is being read correctly and adjust communication settings if necessary.

Key components of the Meter section include status readings and advanced communication parameters:

10.5.1.Meter Status and Identification

- **Status** - The current status of meter communication.

  If everything is fine, this might show "OK" or similar. If there's an issue, it will show an error state. Possible status messages include:

  - **NOT CONNECTED** – The device isn't receiving any data from the meter. This could mean the cable is disconnected, the meter's port isn't active, or wrong interface selected.

  - **KEY REQUIRED** – The meter's data is encrypted and the device needs the encryption key entered. In this case, you must input the key provided by the energy provider (see Encryption section below).

  - **ENCRYPTION KEY** – Indicates an issue with the entered key (e.g., it's invalid or wrong). You might need to re-enter the correct key.

  - **NO DATA** – Physically connected but meter isn't sending data (could be that the meter hasn't been configured to output it).

- **NOT RECOGNIZED** – Data is coming in but not understood (possibly an unsupported format or the device hasn't identified the meter type).

- **RECOGNITION** – The meter has been recognized (this term means it's identified a known meter type, possibly transitional state).
  Each of these statuses alerts you to specific issues to address. Under normal operation, you want the status to indicate everything is OK/recognized and data is flowing.

- **SmartMeter ID** – The identification number of the meter (if available). Some meters transmit an ID (like a serial number) with the data. It will be shown here. If blank, the meter might not send an ID or it hasn't been captured yet.

- **Manufacturer / Type / Model** – These fields show the detected manufacturer, type, and model of the meter, if the meter reports them or if whatwatt Go can infer them. Often, M-Bus meters may not explicitly report all these, so they might remain "Unknown" or blank. But certain protocols do provide manufacturer code and model. This is mostly informational.

- **Scaling Factor Set** – This option indicates whether a predefined scaling profile is applied. Certain meter types may require scaling factors to convert raw values into human-readable units. If the meter type is recognized and standard, the device will apply the correct scaling (such as multiplying or dividing the raw data). If not, you may need to adjust this manually. A warning note suggests that even if the meter is recognized, coefficients may not be accurate if the meter was not configured according to specifications. Typically, you will not need to adjust this unless you observe values being consistently incorrect by specific factors. The default setting is **default** which causes the device to automatically select the appropriate scale set. Another option is **lge570** for the standard configuration recommended by the manufacturer for this meter. Additionally, a custom option allows you to override the default scalers by entering settings in the "Define custom scalers" section.

- **Define custom scalers (Sub option)** – This option allows you to override the selected scalers. To use custom scaler values in the Scaling factor set position, the custom value should be set. If any values in the Live view are incorrect, such as being higher or lower by a multiple of 10, it is possible to correct the value by setting the appropriate scaling factor.

  - The first column (current scalers values) displays the currently used scaling factor. If the scaling factor is unknown, the value {−} is displayed; if the factor is known, a number corresponding to the power of 10 is shown. Note that reference factors only appear when the meter has already been properly recognized.

  - The second column (custom scalers values) allows you to define your own scaling factor, which will override the default value. You do not need to enter all factors, simply set those for which the measurement values are incorrect. Setting your own factor will also update the value in the left column (current scaler values). After applying the settings, the meter will be recognized anew. Using the default scalers option will reset all custom coefficient values.

- **Conversion Factor** – A manual multiplier applied to all readings. This is an advanced calibration tool. For example, if you observe that all power readings are exactly 10 times too high, you could set a conversion factor of 0.1 (or if 100 times too high, use 0.01, etc.). Conversely, if too low, use a factor >1. Typically this should remain at 1.0 unless dealing with unusual meter scaling. The value entered in this item applies to instantaneous power, energy and current. It is also possible to enter, for example, a value of 0.3 for non-standard conversion factor.

10.5.2. Communication Settings – (Usually, these auto-detect. Only adjust if necessary)

- **Interface / Protocol** – Shows the physical interface and protocol being used. For example, "P1-DSMR" or "M-Bus DLMS" etc. If auto-detection fails or chooses wrong, you might manually set it. The UI may allow forcing a specific interface type (e.g., TTL vs RS232), but caution: leaving it on auto is safest if things work.

- **Protocol Version** – If detectable, the version of protocol (e.g., DSMR 5.0). Not usually something you set, just info.

- **Baudrate** – The communication speed (bits per second) for the meter interface. Common values: 9600, 115200, etc. The device usually auto-detects this. If your meter documentation says a specific baud (like some M-Bus are fixed 2400), you might set it if auto isn't catching it.

- **Parity** – Communication parity setting (None, Even, Odd). Again auto-detected normally. Rarely changed manually.

- **Rx/Tx Invert** – An option to invert the signal polarity (for certain TTL signals where wiring or logic level might be inverted). Auto detect usually figures this out. Only change if support advises it for a specific meter.

- **Auto Baudrate** – A toggle to enable/disable the automatic detection of Baudrate/Parity/Invert. By default this is on (auto). If you need to manually set above values, you must turn this off first, otherwise it will override your manual settings. Typically, leave this on unless troubleshooting a tricky meter.

- **IF Type** – Interface Type selection. "Auto" by default, meaning the device will auto-select P1 vs M-Bus vs TTL based on what it sees. If for some reason it picks wrong, you can set it to a specific one (e.g., force to M-Bus). Only do this if you know what you're doing, since forcing the wrong type could stop communication.

- **Encryption (On/Off)** – If your meter's data is encrypted, toggle this to enable entering keys. Many modern smart meters in certain countries require an encryption key (provided by the energy provider) to decode the data. By enabling encryption here, fields for Key 1 and Key 2 become active.

- **Key 1** – The primary encryption key (often called the "P1 AES key" or similar). This should be a 32-character hexadecimal string (16 bytes) provided by your energy provider if needed. Enter it exactly as given (case-insensitive, no spaces).

- **Key 2** – A second key, sometimes used for authentication or as an additional security measure. Some meters have two keys (Key 1 and Key 2). Key 2 might be used to verify the meter hasn't been changed. If your energy provider provides two separate keys, enter Key 2 here. Otherwise, some meters only need Key 1.

- **Notes on Keys** – After entering and saving keys, the fields will blank out (for security). This is normal – the device stores them internally but won't display them. If you need to change a key or remove it, you might need to re-enter or in the case of removal, entering 32 zeros will clear a key. The device ensures that the keys cannot be read back via the interface, for security reasons. If the key is wrong, the Status will show "ENCRYPTION KEY" error as mentioned above.

- **Interval from Meter** – The rate at which the meter sends data. This is usually determined by the meter (for example, DSMR meters often send every 10 seconds). The device may estimate or know this. It's not something you set, but it's useful to know because it defines the fastest frequency of updates. The device will not have new data faster than this interval, no matter how low you set MQTT interval, for instance.

In general, you will use the Meter section to confirm that the device is communicating properly with the meter. Most settings here will never need to be touched if the device successfully reads the meter out-of-the-box (which it should for most supported models). However, if you see a "KEY REQUIRED" status, you'll need to enter the keys here. Or if you have a non-standard meter, a support technician might guide you to adjust a baud rate or interface setting in this section.

If everything is working, the status will show OK and you'll see meter values updating in the Live section.

10.6. Live Data Section

The **Live section** displays real-time measurements and values as reported by your smart meter. This is where you can actively monitor your household's electrical metrics moment by moment.

In the Live section, you will see a list of various electrical parameters with their current values. The data is typically labeled with a short description and possibly an OBIS code (which is a standardized identifier for meter readings). If a particular value is not provided by your meter, it may show a dash or "—" indicating no data.

10.6.1. Common values

- **Current Tariff** – The active tariff rate indicator. Many meters have multiple tariffs (e.g., day/night, peak/off-peak). This field shows which tariff is currently active (or "unknown" if the meter doesn't indicate it). For example, "Tariff 1" vs "Tariff 2".

- **Power In/Out** – The instantaneous active power being consumed ("In") or produced ("Out") by your household, in kilowatts (kW). "In" is positive power drawn from the grid, "Out" is power fed back (if you have solar panels sending excess back to grid). If you don't have generation, "Out" will typically be zero.

- **Power In/Out per Phase** – If your meter is multi-phase (e.g., 3-phase), this breaks down the instantaneous power on each phase, in kW). It helps identify imbalance or phase-specific loads.

- **Power Peak per Tariff** – The maximum power demand recorded for the current billing period or since last reset, segmented by tariff, in kW. This might show the highest consumption seen (overall and for each tariff). Not all meters provide this, but if they do it can inform you of peak usage.

- **Current per Phase** – The current (amperage) on each phase, in Amps (A). This is the instantaneous current draw. Useful for checking if any phase is heavily loaded beyond limits.

- **Voltage per Phase** – The voltage on each phase, in Volts (V). Typically around 230 V per phase in normal conditions. If one phase is significantly lower, it might indicate an issue in supply.

- **Reactive Power** – Reactive (non-working) power being drawn ("In") or returned ("Out"), in kvar. This is used for power factor calculation and is more relevant for industrial scenarios; households typically don't get charged for reactive power, but it's measured.

- **Power Factor** – The instantaneous power factor, usually a number between 0 and 1 (or a percentage). A power factor of 1.0 means all power is active; lower means some reactive power. Closer to 1 is better. For a home with mostly resistive loads, expect 0.95–1.0.

- **Energy In/Out per Tariff** – The cumulative energy consumed ("In") and produced ("Out") for each tariff, in kilowatt-hours (kWh). These are like the meter readings you'd see on a bill: how many kWh you've used in tariff 1 and tariff 2, etc., since a starting point (often the meter's installation or last reset). If your meter has separate registers for peak/offpeak, those values will show here.

- **Reactive Energy In/Out per Tariff** – The cumulative reactive energy (in kvarh reactive) for each tariff. Many residential meters might not list this, but it could appear as well.

- **Date/Time** – The current date and time according to the meter's internal clock. This is the time stamp from the meter. Useful to see if the meter's clock is in sync (some meters might be off if not set by energy provider).

- **Uptime [h]** – The whatwatt Go device's uptime in hours since last restart. This is not a meter value but a device value; it shows how long the device has been continuously running.

The Live section values update at the rate the meter provides data (see "Interval from Meter" in the Meter section). For example, if the meter sends new data every 10 seconds, the live values refresh every 10 seconds. Some might update faster or slower depending on the parameter and meter.

Use this section to monitor your usage in real time. For instance, turn on an appliance and see the Power In jump, or watch how voltage sags slightly under heavy load. It can be very insightful for energy management — seeing these numbers live helps identify which appliances draw the most power and when.

If a value is showing "—" or not updating, it could mean the meter doesn't support that measurement or it hasn't reported it yet. Focus on the ones that do update.

Tip – The Live data is great for quick checks. For logging or long-term graphs, you'd rely on the integrations (cloud or MQTT) to record this data over time. The Live section in the WebUI is primarily for immediate observation and troubleshooting.

11.Advanced Configuration

This chapter covers advanced settings and configurations that are typically of interest to expert users or for specialized scenarios. These include security features, advanced network setups, firmware management, and reset procedures. Beginners do not usually need to adjust these settings, but it's important to document them for completeness and for power users.

11.1.Network Security Settings

While whatwatt Go is designed for ease of use, it's important to maintain network security, especially if the device is accessible on your home network or if you plan any remote access. Here are recommendations and settings related to network security:

- **Firewall** – If you will be accessing whatwatt Go's WebUI from outside your local network (for example, if you open a port or use port forwarding), ensure you have a proper firewall in place. Ideally, **do not expose the WebUI directly to the Internet**. Instead, consider using a VPN for remote access to your home network. This way, you can connect securely to your home network and then access the device as if you were local, without opening it up publicly.

- **VPN (Virtual Private Network)** – Using a VPN (such as WireGuard or OpenVPN on your router) to access your network remotely is a security best practice. If you need to monitor whatwatt Go while away, set up a VPN server on your router or NAS, and connect through that. This encrypts all traffic and keeps the device hidden from the open internet.

- **Wi-Fi Encryption** – Always use a strong Wi-Fi encryption (WPA2 or WPA3) on your router. whatwatt Go supports WPA3 which is the latest standard, so if your router and other devices allow, use WPA3 for the best security. At minimum use WPA2 with a strong password. This prevents unauthorized devices from connecting to your network and potentially accessing whatwatt Go.

- **WebUI Password** – As described in System Section, set a WebUI password (Device Protection) to prevent unauthorized access to the settings. Even on a private home network, it's wise to have this enabled in case someone does gain access to your Wi-Fi or LAN. Choose a strong, unique password.

- **SSH/Console Access** – (If applicable) The device is not intended to be accessed via SSH or serial by end-users. If you happen to enable or use any debug interfaces, ensure they are disabled afterwards. This manual does not cover such interfaces because they are not part of normal use.

- **Network Isolation** – Consider placing IoT devices like whatwatt Go on a separate network segment or VLAN, such as an "IoT network" that is isolated from your main PC/phone network. Many modern routers support creating a guest network or secondary SSID for IoT. You can then allow only necessary communications (for example, to your home automation server) and block internet access if not needed. In the case of whatwatt Go, if you are not using the cloud, you could block its internet access while still allowing local LAN traffic (to your MQTT broker, etc.). Be aware if you block internet, you lose OTA time sync and cloud integration.

- **Regular Updates** – Keep the device's firmware up to date (see Firmware Updates). Security fixes and improvements are delivered through firmware updates. Staying updated ensures known vulnerabilities (if any) are patched.

- **TLS for MQTT** – If sending data to an external MQTT broker over the internet (not just within LAN), use the mqtts:// (TLS) option and ensure certificate verification as possible. This encrypts data in transit to the broker. For local MQTT, encryption is usually not needed if on secure LAN.

- **Cloud Security** – If using whatwatt's cloud, know that data is sent out to their servers. Their service uses secure protocols, but always review the privacy and security measures. Use strong credentials for your cloud account.

- **MAC Filtering** – As an extra layer, you could use MAC filtering on your router to only allow known devices (like whatwatt Go's MAC) to connect. This is a minor obstacle to a determined attacker (as MACs can be spoofed) but can prevent casual intrusions.

- **Disable Unused Services** – If you are not using the cloud feature, you can disable it in Integrations. If not using Bluetooth after initial setup, it's only active on button press anyway. If not using MQTT, keep it off. Reducing active services narrows potential attack surfaces and saves resources.

In summary, treat whatwatt Go as you would any network-connected device – secure your Wi-Fi, limit exposure, and use strong authentication. The device itself provides the basics (password for WebUI, support for secure protocols), but the surrounding network environment is equally crucial.

11.2.User Management & Access Control

By default, whatwatt Go's WebUI does not have multiple user accounts – it's a single interface intended for the owner/admin (you). However, there are still some considerations for managing access:

- **Setting the WebUI Password** – As noted, enabling the password protection in the System section is the primary access control. Once set, only those who know the password can change the device's settings via WebUI. This effectively makes you the "admin" user. Share this password only with trusted individuals who you want to have the ability to configure the device. If you are the sole user, keep it to yourself.

- **Changing Password** – If you need to change the WebUI password (for example, if you suspect it's compromised or you shared it and now want to restrict access), you can toggle the device protection off and on to set a new password, or there may be a direct way to change it when one is already set (depending on firmware). Check the System section – some interfaces have a "change password" function when one is active. If not, disabling and re-enabling will prompt for a new one. During the brief time it's off, ensure you're on a secure network.

- **Username** – The device doesn't use separate usernames – effectively there is just an admin role. The login prompt (if enabled) will have a username field that is left blank, which is a bit unintuitive but by design. There's no concept of multiple user accounts with different roles (like read-only user vs admin) in the current firmware.

- **Multiple Users Viewing Data** – If others want to view the live data but not change settings, one approach is to use integrations: for instance, share the whatwatt mobile app login with family members so they can see the data via cloud, or display data in Home Assistant or another dashboard for them. This way, you don't need to give WebUI access to everyone. Only the person managing the system needs WebUI access.

- **Home Network Access Control** – You can also manage who can access the device via your router. For instance, if you have kids or guests on your network, you might isolate the device so only certain IPs or MACs (like your laptop/phone) can reach it. Router firewalls can sometimes restrict internal network traffic. This is advanced, but an option if you want to be thorough.

- **Logging and Audit** – The device does not have an extensive logging of user actions in the WebUI. It's assumed only authorized users can get in. If you suspect unauthorized access, change the password immediately. You can also see the "Last Reboot" time in System; if the device rebooted unexpectedly, someone might have done it. Also, if settings change without you, that's a clear sign to secure things.

- **Cloud User Management** – If using the whatwatt cloud, note that the cloud account is separate and will have its own login. There you might be able to share data or invite other users (depending on whatwatt's cloud features). That's outside the scope of the device itself, but relevant if multiple people want to see data.

- **Physical Security** – Remember that if someone has physical access to the device, they can press the reset button to factory default it (holding 10 seconds) which wipes the password and network settings. To mitigate this in a shared environment, physically securing the device (e.g., in a locked utility closet) might be considered. That said, a malicious actor with physical access could also just unplug it or intercept the meter cable, so physical security is mainly a concern in public or untrusted settings.

In summary, as the device owner, you'll set one password to control access. Use the network's security measures to restrict who can reach the device, and leverage external dashboards or the cloud app to share data in a controlled way rather than giving out the device credentials.

11.3.Monitoring Network Traffic

For advanced users concerned with network performance or security, monitoring the network traffic of IoT devices like whatwatt Go can be insightful. While whatwatt Go doesn't have a built-in traffic analyzer, you can use external tools to keep an eye on what it's doing:

- **Router Traffic Monitor** – Many routers allow you to see bandwidth usage per device. You might check how much data whatwatt Go uses. Typically, it's minimal (a few kilobytes per reading). If using cloud or MQTT frequently, you'll see a small steady stream. If something looks abnormal (like large data usage), that could indicate an issue (maybe a firmware bug or unauthorized access).

- **Local Firewall Logs** – If you have a firewall that logs outgoing connections, you can monitor where whatwatt Go is connecting. For example, if using whatwatt cloud, you'll see connections to whatwatt servers. If using MQTT, you'll see traffic to your broker's IP. This can verify that it's only communicating with expected endpoints.

- **Packet Sniffing** – An advanced approach is to use a tool like Wireshark or tcpdump on your network to capture whatwatt Go's traffic. This can confirm that data to the cloud is encrypted (it should be HTTPS or MQTT over TLS), and what data is sent over MQTT (if unencrypted, you can actually see the messages which is useful for debugging your integration). Always be cautious with sensitive data, but energy data is not highly sensitive compared to personal info.

- **QoS and Bandwidth** – The traffic from whatwatt Go is very low and doesn't need special Quality of Service. But if you have a lot of IoT devices, you might put them on a QoS low priority so that your main internet usage isn't affected if, say, a firmware update happens. But again, whatwatt's usage is tiny.

- **Detecting Unusual Activity** – If the device were ever compromised (a hypothetical scenario), it might start communicating with unknown servers. Monitoring tools would let you spot that. So knowing the normal pattern (e.g., maybe it pings an NTP server for time, contacts whatwatt.ch domain for cloud, etc.) sets a baseline. If you see connections to random IPs or high traffic at odd times, investigate.

- **Integration Polling** – If you use a home automation system that polls the device via REST (if such API exists), that will generate incoming requests to whatwatt Go. Ensure that those are not too frequent (over-polling could cause heavy load). Monitoring can help adjust polling interval if needed by observing how the device responds.

- **System Logs on Device** – The WebUI doesn't show detailed logs of network events. If you suspect networking issues (like it's not uploading to cloud), use the System/Meter statuses as first clues, and network monitoring second.

- **Updates and DNS** – On firmware update, the device might fetch from whatwatt's server. It uses DNS to resolve addresses. Ensure your DNS (especially if using Pi-hole or custom DNS) isn't blocking something necessary. Monitoring DNS queries from the device (via Pi-hole logs, for instance) can show if it's trying and failing to reach an update server.

To summarize, while not required for normal operation, network-savvy users can monitor whatwatt Go's network behavior using their router or network tools to ensure it's operating normally and only doing what it should. This can add peace of mind in terms of security and performance.

11.4. Firmware Updates

Keeping the device firmware updated is important for receiving improvements, new features, and security patches. Here's how to manage firmware updates for whatwatt Go:

- **Check Current Version** – In the System section of the WebUI, note the current firmware version. For example, it might say "Firmware: 1.0.3". It's good to know this before you update.

- **Find Latest Firmware** – Visit the official whatwatt support website (for instance, whatwatt.ch/support or a dedicated downloads page) to see if a newer firmware is available. The manual snippet indicates the firmware can be found on the website. They might provide release notes too. Ensure you download firmware specifically for whatwatt Go (and correct region if applicable).

- **Download Firmware File** – The firmware comes as a binary file (maybe .bin or similar). Download it to your computer or phone. Note the file name and location.

- **Initiate Upgrade** – Go to the WebUI System section, and click **Firmware Upgrade**. This should prompt you to choose a file. Select the firmware file you downloaded.

- **Start Upgrade** – After selecting, confirm you want to upgrade. The upload will begin – you might see a progress bar. The device will upload the file from your browser to its memory. Once uploaded, it will start writing the firmware. **Do not interrupt power during this process!** It usually takes a couple of minutes. The LED might flash a certain way (sometimes firmware updates flash a pattern).

- **Completion and Reboot** – After the firmware is written, whatwatt Go will automatically reboot to apply the new firmware. Your browser session will disconnect (you might see a timeout or error – this is expected when the device reboots). Wait about 30-60 seconds.

- **Reconnect** – Refresh the WebUI by re-entering the device address. If it doesn't load, give it a bit more time or check if the IP changed (unlikely if same network setup). You may need to log in again.

- **Verify Version** – Once back in the System section, verify the firmware version now reflects the updated version. Also quickly test that things like meter reading and network are working. In rare cases, settings might reset after a major firmware upgrade, but typically they are retained. If they reset, you might need to reconfigure (this should be noted in release notes if it happens).

- **Alternate Methods** – If WebUI upgrade fails or you prefer, some devices allow firmware update via microSD card or TFTP. For whatwatt Go, the primary method is WebUI. Use alternate only if documented by whatwatt (for example, maybe placing a firmware file on the SD card named a certain way might trigger an update – but use that only if standard method is not possible).

- **Troubleshooting Upgrade** – If the device doesn't come back online after an update (LED might be stuck in a certain state), you may need to power cycle it. If still not, a factory reset might be needed as a last resort. But these situations are rare.

- **Frequency of Updates** – Check for firmware updates periodically (maybe every few months) or if you encounter a bug. There might also be a newsletter or email list from whatwatt for update announcements.

By keeping firmware updated, you ensure your device has the latest compatibility (e.g., with new meter types) and security hardening. Always use official firmware from the manufacturer's site to avoid malicious or incorrect software.

11.5. Factory Reset

A factory reset will erase all custom settings and restore the device to the state it was in when it left the factory (or shipped firmware). This is useful if you want to start over fresh or if the device is not functioning correctly and you suspect a settings corruption. It's also often required before transferring the device to a new owner.

11.5.1. Methods to Factory Reset

- **Via Button** – Press and hold the device's button for 10 seconds (until the LED starts alternating green/red) and then release. The device will reset itself (LED blinking pattern indicates progress) and then reboot. After reboot, the LED will blink red (no network configured) as it's now back to default.

- **Via WebUI** – In the System section, use the Reset to Factory Settings option. The WebUI will likely ask "Are you sure?". Upon confirming, it triggers the same process internally. You will lose connection because the device wipes the network config. The LED will go green/red while erasing and then it will reboot to default.

11.5.2. What Happens When Reset

- **All settings are wiped** – Wi-Fi credentials, LAN static IP (if any), integration toggles, MQTT settings, meter keys, WebUI password – everything is cleared to default.

- The device's custom name might revert to default and it will generate a fresh AP mode password. Actually, usually the AP mode password on label remains the same (because that's tied to device ID), so you use the original label's info again.

- No data is stored long-term on the device aside from settings, so there isn't "logged data" that you need to worry about losing (unless maybe some data cached on SD card, but that remains on the SD card regardless). If you had data on SD, that's untouched by reset since it's external, but any config telling the device to log to SD is reset – you might have to re-enable logging if that was a feature.

11.5.3. After Reset

- The device will behave like new.

- You will need to go through the initial setup steps again (Initial setup). That includes connecting to it via AP or Bluetooth, configuring Wi-Fi, etc.

- Meter-specific settings like encryption keys would need re-entry if applicable.

- Firmware version will remain whatever was installed (reset doesn't revert firmware, it's not a downgrade, it just clears settings). Unless you explicitly flash an older firmware, it stays on the current firmware. So any new features from an update will still be there, you'd just configure them anew.

11.5.4.Caution & Notes

- A note from the manual – **Resetting will permanently delete all passwords and settings, including Wi-Fi settings**. If the device was connected via Wi-Fi, it will drop off that network because those credentials are gone. So be prepared to use AP mode or LAN to reconnect after reset.

- If you had changed the WebUI password, that is removed – which is good if you forgot it (reset is the recovery method for lost password).

- Use reset sparingly – it's not harmful, but you will need to set everything up again which can be time-consuming. Try other troubleshooting (like reboot, check configs) before resorting to reset, unless you deliberately want to clear it.

11.5.5.When to Factory Reset

- You are handing the device to someone else or moving it to a completely new environment.

- You forgot the WebUI password and cannot access the device.

- The device is in a confused state (e.g., somehow stuck in an invalid config, though that's rare).

- As per support instruction if debugging an issue (they may sometimes ask to try a reset and reconfigure to see if problem persists).

After resetting, you'll essentially redo the steps from Initial setup onward to get it back up.

12.Best Practices

This chapter provides best practice recommendations for getting the most out of your whatwatt Go, maintaining security, and optimizing performance and energy usage. While not strictly required, following these guidelines can help ensure a smooth and efficient experience over the long term.

12.1.Network Security Recommendations

Keeping your whatwatt Go and your home network secure is paramount. Here's a recap and additional tips (some overlap with Network Security Settings, but summarized for emphasis):

- **Secure Your Wi-Fi** – Use a strong Wi-Fi password and WPA2/WPA3 encryption. Avoid using WEP or having an open network. The device will be as secure as the network it's on. If possible, enable WPA3 on your router (the device supports it).

- **Use the WebUI Password** – Don't leave the WebUI unprotected. Set a device password so that only authorized users can change settings. Make it a complex password that's not easily guessed, and store it safely (password manager or a secure note).

- **Network Segmentation** – Consider isolating your IoT devices on a separate network or VLAN with only necessary access. This way, if any IoT device were compromised, your main devices (PCs, phones) are safer. For example, put whatwatt Go on an "IoT" Wi-Fi SSID that doesn't allow access to your work laptop. But allow that IoT network to talk to your home automation server if needed.

- **Regular Firmware Updates** – Always update to the latest firmware when available, as it may contain important security patches (see Firmware Updates for how). Check the manufacturer's website or announcements every so often.

- **Monitor Access** – Keep an eye on who and what accesses your whatwatt Go. For instance, if you integrate it with Home Assistant, ensure Home Assistant is properly secured too. If you expose data via MQTT, use MQTT authentication and maybe restrict the broker to your LAN.

- **Disable Unused Features** – If you aren't using the whatwatt cloud, you can disable it so the device doesn't maintain an outgoing connection. If you aren't using Bluetooth after setup, it won't broadcast unless button pressed, so it's fine. Turn off MQTT if not used. This principle of least functionality reduces potential vulnerabilities.

- **Physical Security** – As mentioned, secure the device physically, especially in multi-tenant settings. If the device is in an area accessible by others (like a shared electrical room), consider enclosing it or at least be aware that someone could tamper with it.

- **Be Cautious with Port Forwarding** – It's generally not recommended to port-forward the WebUI port on your router for remote access. Use a VPN or the official cloud instead. Direct exposure could invite hacking attempts.

- **Device Placement and Antenna** – For security of the device itself, place it where the antenna can get signal but not in harm's way (like not dangling by the cable where it could get pulled). A stable placement prevents accidental disconnections which can be both an annoyance and a potential safety hazard (sparks if a cable yanks out improperly).

Overall, a layered approach (secure network, secure device settings, up-to-date firmware) will keep your whatwatt Go and the data it handles safe.

12.2.Optimizing Energy Consumption

One of the goals of using whatwatt Go is to optimize your household's energy consumption. The device gives you the data; here are some best practices on using that data effectively:

- **Monitor Your Baseline** – Use the Live data or integration logs to determine your home's "idle" power use – the baseline consumption when no major appliances are on. If this seems high, try to identify always-on devices that could be upgraded or turned off when not needed (old fridge, lights, etc.). Reducing the baseline has big long-term impact.

- **Identify Peak Times** – Look at when your consumption spikes. Is it mornings, evenings? Once you know when peaks occur, try to spread out heavy appliance use. For example, if oven, dishwasher, and laundry are all running in the evening, that's a peak – maybe run the dishwasher later at night or laundry earlier.

- **Use Tariff Information** – If you have time-of-use billing (different tariffs), program your heavy usage (EV charging, water heating, etc.) to occur in the cheaper tariff times. whatwatt Go's data will show when the tariff switches and how much you use in each. Aim to shift as much usage to off-peak as possible, if applicable.

- **Alerts and Automations** – Set up alerts through your smart home system for certain conditions. For instance, if power exceeds a threshold, it might mean you left something on – you could get a notification. Or automate things: if solar production (Out) is high and consumption low, maybe turn on the water heater to store that energy. Conversely, if consumption spikes and no one is home, perhaps turn off HVAC remotely. These smart responses can cut waste.

- **Efficiency Upgrades** – Use long-term data to justify efficiency improvements. If you see your old AC unit draws a lot, consider investing in a more efficient model. If heating is electric and spikes in winter, maybe insulation improvements are in order. Data helps quantify potential savings.

- **Avoid Standby Drains** – The live data can sometimes reveal when an appliance is on standby drawing more power than expected. Try turning things fully off. Using smart plugs for devices that don't need to be on 24/7 and scheduling them off at night (like a printer or entertainment system) can save energy.

- **Compare Against Solar (if you have)** – If you have solar panels, monitor both consumption and production. Maximize self-consumption: run dishwashers, etc., during sunny periods so that solar covers it instead of drawing from grid later. whatwatt Go, if connected to a meter measuring both import and export, gives you insight to do this balancing.

- **Check Power Factor (for larger consumers)** – If you notice a low power factor for certain equipment (could be in industrial or maybe a pool pump), correcting it (capacitors, etc.) can reduce losses. Not usually an issue for homes, but interesting data point.

- **Prevent Overload** – Monitoring current per phase ensures you don't accidentally overload one phase circuit. For example, if you see one phase constantly near max (say 30A) while others are low, you might spread out appliance distribution across phases if possible (like move a heavy load to a different circuit). This optimization prevents tripping breakers and can reduce resistance losses slightly.

- **Regularly Review** – Make it a habit to look at your energy dashboard (via whatever integration you use) weekly or monthly. Identify trends – maybe energy creeping up over months indicates an appliance aging or a schedule change at home. Then take action to address unwanted increases.

Using whatwatt Go's real-time feedback, you can develop a sort of "energy intuition" – you'll know what typical usage looks like and can tell when something's off. Many users find they start gamifying energy saving, trying to shave a bit off here and there, which can lead to significant savings over a year.

12.3.Smart Home Integration Tips

whatwatt Go can be a valuable part of a larger smart home ecosystem. Here are best practices for integrating it smoothly:

- **Leverage MQTT for Local Integration** – MQTT is a lightweight, real-time protocol ideal for smart homes. If you run Home Assistant or OpenHAB, use MQTT to get data into those systems. The manual provided details for MQTT setup (MQTT Section). Ensure your topics and payloads are set in a way that your home automation can interpret – often there are pre-built configurations shared by the community for integrating energy meters. Check if whatwatt or others have a Home Assistant configuration blueprint.

- **Use Home Automation for Alerts** – Integrating means you can set up things like "if power > X for 10 minutes and nobody is home, send alert – maybe an appliance was left on." Or "if power draw drops to near 0 and it's night, maybe everything's off – could arm the security system automatically." These creative automations can improve convenience and safety.

- **Combine with Smart Plugs** – For appliance-level monitoring, you might have smart plugs on specific devices. Combine that with whole-home data from whatwatt Go. For example, if whole-home spikes but all your known tracked devices are off, the culprit might be something unmonitored – maybe time to add a smart plug to it. Conversely, verify the sum of appliance usage roughly equals the whole-home to catch any unknown draw.

- **Dashboarding** – Create a nice energy dashboard in your smart home app or wall panel. Show current usage, daily usage, solar production (if any), etc. Humans in the household are more likely to adapt

behavior if they see a real-time display of, say, current cost per hour. Some people put a tablet on the wall with a live energy meter gauge – it can become a conversation piece and keeps everyone energy-conscious.

- **Automate Based on Tariffs** – If your integration can get tariff info (some regions publish a schedule or have an API, or you can manually input times for peak/offpeak), you can automate accordingly. For instance, in Home Assistant, you could set a boolean "cheap_rate_now" and then only allow the EV charger or water heater to run when that's true, plus some logic for overrides.

- **Smart Device Triggers** – Combine with other sensors: e.g., if no motion in house and power draw > baseline, maybe something left on -> turn things off after warning. Or if solar > X and battery (if any) full, then trigger certain loads to take advantage of free solar power (like turn on pool pump).

- **External Data Integration** – whatwatt Go via its REST or cloud might integrate to other services like energy management platforms or energy company programs. If your energy company has demand response or monitors, feeding them your data (if supported) could give you incentives. Check if whatwatt is recognized by any such programs.

- **Integrate with Voice Assistants** – Through your smart home hub, you could ask Alexa/Google "What's my current power usage?" if you expose a sensor. Or "How much energy did we use today?" It's a cool way to make the data accessible to all family members, even those who don't use the apps.

- **Document Your Setup** – As you integrate, keep notes of any customizations (like MQTT topics, template modifications). This will help if you ever reset or migrate systems.

- **Stay Updated on Integrations** – The smart home landscape evolves. New integrations or plugins might emerge that directly support whatwatt Go. Check online communities occasionally (Home Assistant community, for instance) for any user-contributed tools or experiences for whatwatt Go. You might find easier ways or more things to do with it over time.

By making whatwatt Go a part of your smart home, you gain not just data but actionable intelligence. It can help your smart home not just be convenient, but also economical.

12.4. Maintenance & Long-Term Use

whatwatt Go is designed to be low-maintenance, but over years of operation, a few practices can ensure it continues to work well:

- **Periodic Reboots** – The device should run continuously without issues, but some users like to schedule a periodic reboot (say monthly) for networking devices to clear any minor glitches. You can do this manually via the System > Reboot or even automate it (e.g., a Home Assistant automation to call the reboot endpoint if one exists). This is not strictly necessary unless you notice it getting slow or data not updating after very long uptimes.

- **Check Connections Annually** – Perhaps once a year (for example, when you do other home maintenance), briefly inspect the whatwatt Go installation. Ensure the RJ12 plug is still snug in the meter (vibrations or pulling could loosen it), the USB power cable (if in use) is not frayed and is snug, and the antenna is tight. Also, dust it off if there's accumulation, especially if in a dusty utility room – while it can handle some dust, keeping it clean helps with cooling and connectivity.

- **MicroSD Care** – If you are using a microSD for data logging, be aware that SD cards have limited write endurance. If the device writes very frequently, the card could wear out after a few years. Use a high-endurance card if possible. And consider backing up important logged data from the SD to a PC occasionally. If the SD fails, it might simply stop logging; the device should otherwise run fine. Replacing the SD with a new one and formatting it might be needed in that case. Signs of SD issues might be error messages in WebUI (if any) or log stops updating.

- **Firmware Updates** – We mentioned it before, but it's part of maintenance to check for updates. Perhaps set a calendar reminder quarterly to look for new firmware. If everything is working you might be tempted to avoid updates, but do read the release notes – if a new version fixes something important or adds a feature you like, plan to update. If it's minor, you can weigh the urgency.

- **Antenna and Signal** – If you change your Wi-Fi router or rearrange your home, monitor whatwatt's Wi-Fi signal (in the WiFi/LAN section). If the signal falls low (say below 20-30%), you might get intermittent data. Consider relocating your router or the device for better reception, or using the optional bigger antenna if needed. Maintaining a good signal will ensure data is reliably transmitted

(and also keep power usage lower, since the Wi-Fi module uses more energy when trying to communicate under low signal conditions).

- **Data Management** – If you use the cloud service, check if it has any limits (some might only keep 1 year of data, etc.). You might want to periodically export or note your usage for records. Similarly, if you log everything in your home automation database, watch the database size – you might aggregate or purge old data as needed to avoid giant databases.

- **Device Handling** – Remember, this is an electronic device; don't drop it or let it get waterlogged. If you need to unplug it (for instance, doing electrical work on the panel), it should handle power off/ons fine. Just shut it down gracefully if possible (Reboot, then pull power) to avoid any SD card corruption if writing at that moment.

- **Support and Community** – For long-term use, know how to get help if needed. Keep the support contact (which might be an email like info@whatwatt.ch) handy, or join a community forum if one exists. If you run into odd issues after years (maybe new meter installed by energy provider, etc.), reaching out with your scenario can help.

- **Environmental Considerations** – The device operates -10°C to 40°C. If your meter is outdoors or in a cold garage, ensure it doesn't get colder or hotter than it can handle. Usually meter boxes keep things above freezing, but in extreme climates just be mindful. Humidity should be non-condensing; avoid locations that get very damp. If you expect high humidity (near boilers etc.), maybe put it in a small enclosure (though that can reduce Wi-Fi performance—balance the need).

By following these practices, whatwatt Go should provide reliable service for years. It's a solid-state electronic with no moving parts, so with proper care it can last well beyond its 2-year warranty period.

13. FAQ – Frequently Asked Questions

This section addresses common questions and issues users might have with whatwatt Go. If you don't find your question here, consult the full manual above or contact support.

Q1 – How much power does whatwatt Go itself consume? Is it expensive to leave on 24/7?
A – whatwatt Go is very energy-efficient. It typically consumes only 0.25–0.75 Watts of power. Over a full day, that's about 0.006 to 0.018 kWh – a fraction of a cent in cost. It's negligible compared to most household devices. Even when powered from your meter, it draws minimal energy. You can run it continuously without worrying about it impacting your electricity bill in any significant way.

Q2 – Can whatwatt Go run only from the smart meter without the USB-C power?
A – Yes, in most cases. whatwatt Go is designed to be powered directly by the meter's interface port so you don't need an external plug. However, if the meter's port provides limited power so intensive using of integrations (local REST API, MQTT), WebUI panel or if the Wi-Fi signal is weak (causing the device to boost radio power), it might struggle when on meter power alone. If you notice instability, use the USB-C 5V adapter to supplement it. Using the USB power is recommended during initial setup and in scenarios where meter power is borderline (e.g., some M-Bus meters or during firmware updates).

Q3 – I don't see any data in the Live section, and the LED is solid red. What's wrong?
A – A solid red LED means the device is network-connected but there's a problem communicating with the meter. Common causes:

- The RJ12 cable might not be plugged in firmly or at all – double-check the connections.

- Your meter's customer port might be **disabled**. Some utilities ship meters with the port off by default for privacy. You may need to contact your energy provider to enable the port (sometimes called enabling P1 output).

- The meter might require an **encryption key** to allow reading data. If your meter is one of those (often indicated by the documentation or if the status says "KEY REQUIRED"), you'll need to enter the key in the Meter section of WebUI. The key is provided by your energy supplier (typically on request or via a letter when the smart meter was installed).

- Ensure the interface type is correct. whatwatt Go usually auto-detects P1 vs M-Bus. If you have an adapter (like for Kamstrup), make sure it's properly used. For Kamstrup Omnipower, you must use the Kamstrup HAN adapter; otherwise it won't read and you'd get solid red.
  After addressing the above, the LED should turn solid green when it can read the meter.

Q4 – I changed my Wi-Fi router (or Wi-Fi SSID/password). How do I reconnect whatwatt Go to the new network?
A – If your Wi-Fi credentials changed and whatwatt Go can't connect, the LED will be blinking orange/green. You have a couple of options:

- **If you kept the same SSID and password** – The device should reconnect automatically once the new router is up (assuming you configured the new router with the same wireless settings). If not, maybe the security mode changed (like WPA3 only). Ensure compatibility or use the method below.

- **Use Access Point Mode** – You can manually trigger AP mode by holding the button 6 seconds. Connect to its "whatwatt-XXXXXX" Wi-Fi and go to 192.168.254.1 as in initial setup (Method 3: Access Point (AP Mode) via Web Interface). Then update the Wi-Fi settings to the new network (enter new SSID/password), save and reboot.

- **Use Bluetooth/App** – Alternatively, put it in Bluetooth mode (0.5s press, LED yellow) and use the whatwatt mobile app to send the new Wi-Fi credentials, similar to initial setup.
  If those fail, you can use a wired LAN connection temporarily to access WebUI and change Wi-Fi. In any case, you do not need to factory reset just for a Wi-Fi change – you can simply reconfigure networking.

Q5 – Does whatwatt Go support 5 GHz Wi-Fi networks?
A – No, it only supports 2.4 GHz Wi-Fi (802.11 b/g/n). This is common for IoT devices because 2.4 GHz has better range and penetration (good for basements, meter cabinets, etc.). Ensure your router's 2.4 GHz band is enabled. It's fine to have the same SSID for 2.4 and 5; the device will connect to the 2.4. Just remember, if you try to connect to its AP with a phone, your phone must support 2.4 (virtually all do, but sometimes very new mesh systems can confuse the process – you might need to temporarily ensure your phone is on 2.4 when configuring).

Q6 – My whatwatt Go is online, but my Home Assistant (or other MQTT client) isn't receiving any data. What could be wrong?
A – A few things to check for MQTT issues:

- Make sure **MQTT is enabled** in the device's MQTT section. It's not on by default until you configure it.

- Verify the **broker address and port are correct**. If Home Assistant's MQTT broker is on the same network, use its IP and correct port (1883 for non-TLS). If using Home Assistant's addon, often the broker is at homeassistant.local or so; try the IP of the HA machine.

- Check **username/password** for MQTT. If your broker requires credentials (e.g., Home Assistant's Mosquitto by default requires a user/pass you set), those must match. If you haven't set one up, you might need to create a user for whatwatt.

- Ensure the **topic** matches what your Home Assistant is expecting. Home Assistant won't automatically know the topic – you must either configure an MQTT sensor in HA with the exact same topic whatwatt is publishing to, or change whatwatt's topic to a known one. Check whatwatt's "Publish Topic" setting and use a MQTT client or HA's MQTT integration "Listen to a topic" feature to see if messages come through on that topic.

- If using **MQTT TLS (mqtts://)**, ensure the broker supports it and the device can verify the certificate (some IoT devices might skip verification or require specific cert). Try non-TLS internally first to narrow down the issue.

- On Home Assistant, look at the MQTT broker logs to see if whatwatt Go connected or if there were login errors. That often pinpoints auth issues.
  Once configured correctly, whatwatt Go will publish regularly (by default every few seconds). The payload might be a JSON; ensure your HA MQTT Sensor is parsing it right (you may need a template sensor to extract fields if it's not just a single value). Consult any whatwatt-HA integration guides if available.

Q7 – I think my meter data might be encrypted. How do I get the key and enter it?
A – In some regions (e.g., Netherlands, parts of EU), smart meters come with data encryption for privacy. The key (sometimes called P1 key) is typically provided by your energy provider or grid operator. It may be printed in a letter or on the meter itself (though not usually on meter for security). If you don't have it, request it from the energy provider; they might verify your identity and give it to you. Once you have the 32-character hex key, go to the **Meter section** in whatwatt WebUI, **enable Encryption**, and input the key in **Key 1** (and Key 2 if provided a second key). Save settings. The status should change from "KEY REQUIRED" to "OK" if the correct key is entered and the device can now decrypt the data. If it says "ENCRYPTION KEY" error still, double-check the key entry (typos, O vs 0, etc.). Remember after saving, the fields blank out (security feature), so if you made a mistake you'll have to re-enter. Once the key is right, you should start seeing normal readings and the LED should go green.

Q8 – The device's LED keeps blinking orange/green even after I set up Wi-Fi.
A – Blinking orange/green indicates no Wi-Fi connection. If you have configured Wi-Fi but it's still blinking orange/green, it means it didn't actually connect. Possible reasons: wrong Wi-Fi password entered, out of range of Wi-Fi, or network changed. Try reconfiguring the Wi-Fi (see Q4 above). If it was working before and suddenly blinks orange/green, maybe your router is down or the device fell off the network; investigate your network status. In summary, blinking orange/green = Wi-Fi connectivity, so focus on network setup.

Q9 – How can I integrate whatwatt Go with HomeAssistant, Loxone, OpenHAB, Node-RED, PV monitoring, etc.?
A – The primary ways to integrate are via **MQTT or REST API**. For OpenHAB or Node-RED, MQTT would be straightforward: configure whatwatt as MQTT client (as in MQTT Section) and subscribe to the topic in those systems. Node-RED can use an MQTT-in node to get the data and then you can process or forward it. For systems that can make HTTP calls, whatwatt Go has a REST interface (the data-sheet or support page might document REST endpoints where you can GET current values in JSON). Otherwise, if the system can't do MQTT or REST directly, you can always have an intermediary (like Home Assistant or Node-RED) and then link that to another system. Also, some third-party energy dashboards support custom data input; you could use a small script on a home server to forward whatwatt data to those. The flexibility of MQTT and REST means it can integrate with almost anything with a bit of glue logic. Look up community forums – someone may have already connected whatwatt Go to the system you have in mind and could share details.

Q10 – My smart meter also measures gas/water (via P1 port). Can whatwatt Go get that data too?
A – Some P1 interfaces on smart meters (like Dutch DSMR meters) include gas meter readings if a gas meter is linked, as well as water in rarer cases. whatwatt Go, supporting DSMR, should capture those telegrams too. Typically, the gas meter reading comes through once every 5 minutes in the data stream. The whatwatt Go Live section might or might not display gas explicitly. If it's not shown on the WebUI, the data might still be in the raw telegram. If you integrate via MQTT/REST, you may find gas readings (OBIS code for gas, e.g., 0-1:24.2.1 for gas volume). Check the MQTT payload or advanced data for any gas register. If not, it could be that future firmware updates might expose it. But since the device is reading the P1, it shouldn't ignore the gas data.

Q11 – If I have solar panels, can whatwatt Go tell me how much I produce vs consume?
A – Yes. The smart meter typically measures import (consumption from grid) and export (production sent to grid). whatwatt Go will show "Power In" (import) and "Power Out" (export) (expressed in kw/) in real time, plus cumulative energy for each (Energy In and Energy Out). However, note that solar production consumed in-house (self-consumption) doesn't go through the meter (it's just less import). The meter (and thus whatwatt Go) can only tell what you took from or sent to the grid. So if you want to know total solar generation, you'd need a separate generation meter or data from your inverter. But whatwatt Go will accurately tell you net import/export. So you can infer solar use: e.g., midday if Power In is zero and Power Out is 1 kW, you're generating surplus 1 kW (and maybe also using some concurrently). If Power In is low during sun hours compared to other times, you're self-consuming. Some solar monitoring systems combine inverter data with meter data for full picture. whatwatt Go gives the grid side data. Integration with something like Home Assistant can marry the two if you have inverter info there. In summary, it helps with solar monitoring on the grid import/export side, but doesn't directly read the panels' output unless your meter itself is reading it.

Q12 – The device seems to reboot or turn off randomly when only meter-powered – is it faulty?
A – It's likely not a fault of the device but rather a limitation of meter power (M-Bus meters), intensive using of integrations (local REST API, MQTT), WebUI panel or poor connectivity. If Wi-Fi signal is weak or MQTT reporting at high frequency, the power draw might spike slightly and if the meter can't supply it, the device brown-outs (restarts). Solutions: improve Wi-Fi signal (move router closer, attach bigger antenna, or use LAN), or use the USB-C power to provide a steady supply. Also check if your meter is a type that provides very limited current (some M-Bus ports only give a small current). The manual noted Kamstrup specifically – on those, external power might be needed. So, try adding the USB power – if the reboots stop, it was power starvation. There's no harm in running the device with dual power (meter + USB) – it will draw what it needs from USB and relieve the meter. If it reboots even with USB, then it could be an actual device issue – check firmware (update if not latest) and contact support if it persists.

Q13 – Is whatwatt Go compatible with my specific meter model?
A – It supports most meters with P1 or M-Bus interfaces. The manual's compatibility section (Smart Meter Compatibility) lists many brands and models known to work (whatwatt: Home), including Ensor, Iskraemeco, Landis+Gyr, Sagemcom, Kamstrup (with adapter), Semax (with adapter), NES, etc. If your meter is one of those or adheres to DSMR or IEC standards, it should work. If you have a less common meter, check the interface: if it has a P1 port (RJ12) or an M-Bus output, odds are high it will work. You may need an adapter for some proprietary ports (like optical-only meters or ones with screw terminals might need an M-Bus level converter). For absolute certainty, ask whatwatt support or look up if someone has tried your model. In many cases, the device is "universal" as claimed, so compatibility is broad.

Q14 – After a power outage or if I unplug whatwatt Go, do I need to reconfigure anything?
A – No, all your settings are stored in non-volatile memory. It will boot up and reconnect automatically to the Wi-Fi and start sending data as before. You might see a gap in your data logging for the downtime, but otherwise it resumes normal operation. If you have a whole-home backup power and you want to monitor outages, note that if whatwatt loses power it can't report — but since it's drawing from meter, if the grid is out, meter is likely out too (and your router/internet might be out unless on UPS). So not much to do there. The key point: no reconfiguration needed after losing power, it's truly plug-and-play.

If you have any other questions not covered here, please refer to the relevant section of the manual or reach out to our support team. We're here to help ensure you have a successful experience with your whatwatt Go.

14. Troubleshooting

This section provides guidance on resolving some problems that might arise while using whatwatt Go. Some issues were already addressed in the FAQ in a Q&A format; here we present structured troubleshooting steps for a few scenarios.

14.1. Common Issues & Solutions

No Data / "Not Connected" Status – If the WebUI Meter section status shows "NOT CONNECTED" and Live data is blank:

- Verify the physical connection to the meter. Unplug and re-plug the RJ12 cable on both ends.
- Check if the meter port is enabled (contact energy provider if unsure).
- Ensure whatwatt Go is powered (LED should be on). If meter power isn't turning it on, use USB power.
- If using an adapter (e.g., for Kamstrup), ensure the adapter is correctly installed between whatwatt and meter.
- Try a different cable if possible (a faulty cable can be the culprit).
- If still no data, the meter might be using an unsupported protocol – contact support with your meter model.

Wi-Fi Connection Failing – If you cannot get the device to connect to Wi-Fi (blinking red LED persists):

- Double-check the SSID and password (remember they are case-sensitive).
- Move the device temporarily closer to the router to see if distance is the issue. If it connects when closer, you need a better signal at the install location (maybe a Wi-Fi extender or the external antenna if not attached).
- Ensure the router isn't using enterprise Wi-Fi (802.1x) or a captive portal – it should be a standard home network.
- As a test, connect via LAN cable (if feasible) to see if the device itself works fine; then focus on Wi-Fi settings.
- If you changed the network, maybe the device is still stuck on old settings – triggering AP mode or a factory reset can allow fresh config.

Cannot Access WebUI – If you can't reach the Web interface:

- Find the device's IP (see Accessing the Web Interface (WebUI)). If the IP is unknown, use the methods described (router DHCP list, mDNS name).
- Ensure your computer/phone is on the same network. If you're on a guest network that isolates clients, you may not reach it.
- Try pinging the device IP to see if it responds. If ping fails, device may not be connected or IP changed.
- If using hostname (whatwatt-XXXXXX), try the IP directly, or vice versa.
- If WebUI was protected with password, it should still show a login prompt at least. If nothing loads at all, it's likely network connectivity issue.
- In worst case, use the reset button to revert to AP mode and connect that way, then reconfigure networking.

Data on Cloud/App not updating – If the app or cloud dashboard isn't showing new data:

- Check the device's LED; if it's blinking green, it means it's connected locally but not to cloud. Possibly the internet is down or the cloud service is off. Ensure the internet connection is working for other devices.

- Login to your whatwatt cloud account to see if the device is listed or shows offline status.

- In WebUI, go to Integrations and verify "whatwatt (cloud)" is enabled. If you had disabled it earlier, the app won't get data.

- If using firewall rules, ensure the device can reach the internet (it might use HTTPS to specific servers).

- Try toggling the cloud integration off and on, or reboot the device. Sometimes re-establishing the session helps.

- Check if there's a firmware update – occasionally cloud protocols change and require an update.

- If nothing helps, contact support – the issue might be on the cloud side or account linking.

Incorrect Readings – If the values seem incorrect (e.g., power values off by a factor of 10, or no import while you clearly are consuming):

- Possibly a scaling issue. Check the Meter section: is "Conversion factor" set correctly (should usually be 1.0)? If it's not 1, perhaps it was accidentally changed. Set it to 1 and see.

- If you have a very old meter or unusual one, maybe it reports in deciwatts or something odd – you could use the conversion factor to correct (as per meter manual).

- For no import showing: if you have solar and it's midday, it could be you are self-sufficient (power in = 0 is actually correct then). But check at night or high load to confirm it does register import.

- Check that "Scaling factor set" is applied if needed. If your meter requires certain OBIS scaling and it's not standard, the readings could be off.

- Compare with your meter's display – do they roughly match? If yes, whatwatt is reading right. If the meter LCD shows usage but whatwatt shows zero, then it's likely a communication issue (like missed data or key required).

- If cumulative energies seem off or not increasing, that's a sign data isn't coming in fully – recheck the meter status messages for clues.

Device Unresponsive – If the device doesn't seem to respond to button presses or network:

- Perform a power cycle: unplug USB (and meter cable if that's providing power, but better to just plug in USB and then remove to ensure it truly resets) and plug back in. See if it boots (LED activity).

- If still nothing (no LED at all), it could be hardware failure or no power. Try a different USB cable/charger to eliminate a bad power source. If meter-powered, try USB to see if the meter port died.

- If LED comes on but still cannot interact, consider factory reset via button (10+ sec) to clear any weird state.

- This scenario is rare; hardware is solid-state. If truly unresponsive, contact support – it may need repair/replacement.

14.2. Resetting the Device

If you need to reset the device (soft resets or factory resets), here's a quick how-to:

- **Soft Reset / Reboot** – Use the WebUI's System > Reboot option to perform a graceful restart. If you cannot access WebUI, unplugging and replugging power will do a hard reboot (no settings lost). There is no dedicated reset button aside from the main button long-press (which triggers factory reset). A short power cycle is effectively a reset.

- **Factory Reset** – As detailed in Factory Reset, hold the button for 10 seconds until LED flashes green/red, then release. Or use WebUI System > Reset to Factory Settings. Remember this wipes everything (see Q4 in FAQ for re-setup steps). After factory reset, the device's LED should blink red then possibly

go to AP mode (yellow/red) ready for setup. If it remains green/red or solid red after attempted reset, ensure you held the button long enough and try again. The green/red flash must be seen.

14.3. Network Diagnostics

If you suspect network issues:

- **Ping Test** – From a PC on the network, run ping [device IP] (or ping whatwatt-XXXXXX.local). A healthy device on LAN should respond with low latency. If it doesn't, it's not connected or firewall is blocking ICMP.

- **IP Conflict** – If you set a static IP and that IP is also given out via DHCP to another device, you'll have issues. Ensure no IP conflict – checking your router's client list for duplicates. Using DHCP avoids this, or use an IP outside the DHCP range for static.

- **Signal Strength** – In WiFi/LAN section, note the Wi-Fi signal percent. If it's very low, consider moving things for better signal or using an external antenna. Poor signal can cause intermittent dropouts.

- **DNS** – If accessing by hostname isn't working, it could be a DNS or mDNS issue. Ensure your device doing the lookup has mDNS capability or that your router's DNS learned the device name. Otherwise use IP to avoid this variable.

- **Port Blocking** – Typically, whatwatt uses port 80 for WebUI, which is open internally. If you run any strict firewall internally, allow that. For MQTT, port 1883 or 8883 to your broker – ensure broker isn't firewalled off. For NTP (time sync), it uses UDP 123 – but even if that's blocked, only time sync fails, not critical. Cloud would use port 443 (HTTPS) – ensure not blocked if using cloud.

- **Multiple Networks** – If you have multiple subnets/VLANs, verify that your PC and whatwatt are on the same one or that routing is set up between them. The device won't magically traverse VLANs without proper router config.

- **Speed** – If the WebUI is slow or data updates lag, it's usually not a network bandwidth issue (the data is tiny). Could be a browser issue – try another browser. If MQTT seems slow, check the interval setting (maybe it's set high, like 60 sec). And ensure your broker and subscriber are keeping up.

- **Update Firmware** – It's repeated often, but network stacks can have bugs; newer firmware might fix weird connectivity problems. If you experience network drops that aren't signal-related, consider updating to the latest firmware.

By systematically checking these network aspects, you can usually pinpoint the problem. Remember that in many cases, issues turn out to be misconfigurations rather than hardware faults – which is good news, as those can be fixed with settings changes.

If all else fails and you cannot resolve an issue, don't hesitate to contact whatwatt support for assistance. Provide them with the device serial/ID, firmware version, meter model and a clear description of the problem and steps you tried. They may offer additional troubleshooting or an RMA if hardware is suspected faulty.

15. Additional Functions & Integrations

15.1. Cloud Service and Mobile App

whatwatt Go comes with an optional **cloud service** provided by whatwatt and a companion **mobile app**. Using these can enhance your ability to monitor energy usage remotely and receive updates:

- **whatwatt Cloud** – When enabled (via the Integrations section), whatwatt Go sends your energy data to the cloud platform. This allows you to access your data from anywhere through the internet. The cloud service may provide additional analytics, longer-term data storage, and possibly integration with utility programs. To use it, you should have created an account with whatwatt (likely during app setup). Data is typically viewable on a web dashboard or just within the app. Ensure your device has internet connectivity for this to function.

- **Mobile App** – The whatwatt mobile app (available on iOS/Android) serves both as a configuration tool (via Bluetooth) and a monitoring dashboard. After setup, you can use the app to see live consumption, historical charts, costs, etc. It's user-friendly for family members who just want to see usage without logging into routers or HA systems. The app requires the cloud service to be on, as it fetches data from the cloud.

- **Notifications** – The app or cloud might support sending notifications – for example, alerts for unusual usage or when your consumption exceeds a certain threshold. Explore the app's settings for any alerting features and configure them to your needs (like push notification if usage stays above X kW for Y minutes). This can be very handy to catch anomalies.

- **Firmware Updates via Cloud** – The cloud can notify or even push firmware updates to the device. whatwatt does OTA updates through cloud – but keep an eye on announcements. You might still need to manually upload firmware as per Firmware Updates.

- **Privacy** – If you're concerned about privacy, note that enabling the cloud means your consumption data is stored on whatwatt's servers. They likely anonymize and protect it (and it's probably covered in their privacy policy). If this is a concern, you can stick to local integrations only (MQTT/REST) and disable cloud. The device gives you that choice.

- **Using Multiple Devices** – If you have more than one whatwatt Go (say for multiple meters or locations), the app can handle multiple devices. Ensure each is added to your account. They will appear separately, and you can name them accordingly in the app (e.g., "Home Meter", "Workshop Meter"). The cloud and app are built to scale to many devices per user.

- **Data Export** – Check if the cloud portal allows exporting your data (CSV, etc.) if you ever want to analyze it in spreadsheets or keep an offline copy.

- **Third-Party Clouds** – Aside from whatwatt's own cloud, the device supports third-party cloud integrators like myStrom and Solar Manager. These typically require accounts on those services. If you use them, configure the device as per instructions (often just a toggle – the heavy linking might be done via your account on those services). They can provide specialized insights (myStrom for home automation in Switzerland, Solar Manager for PV optimization). Use these if they fit your ecosystem.

In essence, the cloud and app bring convenience and remote access, whereas local integration brings more control and privacy. You can even use both simultaneously (for example, cloud for quick mobile checks, and MQTT for feeding into your local home automation). The device is capable of multi-streaming data.

15.2. Integration with Other Systems (IoT/Smart Home)

We've touched this in Best Practices (11.3) – whatwatt Go plays well with IoT and smart home systems.

- **Home Assistant** – Many advanced users integrate whatwatt Go with Home Assistant. This is typically done via MQTT. Once integrated, Home Assistant can display the data in its Energy Dashboard (HA has a dedicated energy dashboard feature). To use that, you might need to set up HA's Energy config, pointing it to the appropriate sensor values (grid consumption, return to grid, etc. from whatwatt). Home Assistant also supports utility meter helpers to reset counters monthly, etc. There isn't an official built-in integration specifically named "whatwatt", but the generic MQTT integration covers it.

- **OpenHAB** – Similar to HA, use the MQTT binding in OpenHAB to subscribe to whatwatt's topics. Then you can create Things and Items for the various data points. OpenHAB's persistence can log data, and UIs can display graphs.

- **Node-RED** – Node-RED can subscribe to MQTT and then you can use nodes to process or send data elsewhere. For instance, Node-RED could take whatwatt readings and send them to an InfluxDB for storage, or to a telegram bot for alerts.

- **Grafana** – If you store data in a time-series database (like Influx or Prometheus) from whatwatt, you can use Grafana to create rich dashboards and graphs of your energy usage over time. This can be displayed on a tablet or PC. Some people integrate Grafana graphs back into Home Assistant UI as well.

- **Loxone** – whatwatt defined a plug-in for loxone that is available via the Loxone library. Please check the „How-To - Integration into Loxone" for further details.

- **IFTTT / Webhooks** – If you want simple triggers, Home Assistant or Node-RED can also act as middlemen to IFTTT or direct webhooks. For example, if consumption goes above a threshold, trigger an IFTTT event to maybe flash smart lights red as a visual cue. The possibilities are endless.

- **Smart Plugs and Relays**– Combining data, you might have rules like "if solar output > 2kW and washing machine is off, turn on smart plug to start the washing machine (if it's on a smart plug or connected to a relay)". Or simpler: "if leaving house and consumption > 500W, alert that something big is still on". These involve other IoT devices in synergy with whatwatt.

- **Energy Management Systems** – If you have a larger setup, like an automated home energy management (with battery storage, EV charging control, etc.), whatwatt Go provides the real-time data needed for those controllers to make decisions. Some systems like Loxone or KNX-based controllers can also ingest MQTT or analog signals.

- **Custom Scripting** – A tech-savvy user might write a Python script that polls the whatwatt REST API every minute and logs to a database or does custom analysis (e.g., anomaly detection). The open nature (through standards) means you aren't locked into one software.

- **Community Plugins** – Keep an eye out for community-developed plugins or integrations. E.g., there might be a user who wrote a Homebridge plugin to expose whatwatt data to Apple HomeKit (so you can see usage in the Home app). Or a custom integration in Home Assistant that simplifies setup. These can save time if they exist.

The key to integration is that whatwatt Go provides standard hooks (MQTT, REST). Leverage those according to the tools you use. It essentially becomes a sensor in your larger IoT ecosystem, enabling smarter energy-aware automation.

15.3. Automation and Scripting

Building on integration, here are some automation ideas and how to implement them:

- **Peak Shaving Automation** – Use your smart home system to automatically turn off or delay non-critical loads when consumption is above a threshold. For instance, if you have an electric vehicle charging and you turn on the oven and AC, you might exceed a certain amp draw. An automation could temporarily pause EV charging until the oven is off. To do this, monitor whatwatt's power reading and if > X kW, send a command to the EV charger via its API or smart plug to pause. Resume when back under threshold. This prevents breaker trips or high peak demand charges.

- **Load Shifting Scripts** – You could script daily routines: e.g., at 1am (off-peak), if the water heater (on a smart relay) hasn't heated water yet, turn it on to heat using cheap power. The decision can also factor in whether you already heated water earlier (by tracking energy use patterns).

- **Alerts for Unusual Usage** – Script something like: if energy usage between midnight and 5am exceeds, say, 2 kWh (when typically everyone's sleeping and usage should be low), send an alert in the morning: "You used 2 kWh last night between 12-5am, which is higher than usual. Possible cause: heater running or device left on." This can prompt checking things (maybe someone left an electric heater on). This could be done with Home Assistant's automation or a custom script analyzing hourly data.

- **Solar Excess Utilization** – If you have solar and maybe a resistive load like an immersion heater or an AC that can be turned on, automate it: when solar production (inferred from whatwatt export) is above a certain value and your battery (if any) is full, then turn on a device to soak up excess instead of exporting to grid. This requires careful control and likely fast response (maybe using Node-RED for quicker logic). It's like your own DIY solar diverter using whatwatt readings as input.

- **Budgeting** – You can script monthly energy budget monitoring. E.g., reset a counter each billing period and accumulate energy. If exceeding expected usage halfway through the month, send a notification or change some automations (maybe turn thermostat down by 1 degree to save a bit, if you have smart thermostats).

- **Logging to Google Sheets** – A simpler approach to data logging/analysis for non-coders: use something like IFTTT or a small script to append daily total usage to a Google Sheet. Over time you have a spreadsheet of daily usage to analyze.

- **Backup Data** – Automation can also backup config: for example, schedule a monthly backup of whatwatt settings via a script (if there's an API or just manually note settings). Not critical, but something enthusiasts might do.

When writing custom automation or scripts, always include some safeties – e.g., if your automation fails or the whatwatt data is unavailable, ensure your devices have fallback (you wouldn't want your EV never charging because it didn't get a resume command due to a sensor glitch).

These advanced uses turn your whatwatt Go from a passive monitor into an active participant in managing your home's energy.

16. Technical Support and Warranty

If you encounter issues that you cannot resolve with the information in this manual, or if you suspect a hardware fault, here's how to proceed.

Technical Support Contact

- You can reach whatwatt's support via the official **channels**

  - **Website** – Visit whatwatt.ch/support for FAQs, latest documents, and possibly a support ticket form.

  - **Email** – Send a detailed message to support@whatwatt.ch or info@whatwatt.ch (use the one provided in the documentation or website). Include your device model (whatwatt Go), serial number or ID (from the label), firmware version, meter model and a clear description of the issue. The more details (what you tried, when the issue occurs, any error messages), the faster they can help.

  - **Phone** – If a phone support line is available (check the website or your purchase info), you can call during business hours.

  - **Community Forums** – whatwatt might have user community forums or threads on platforms like GitHub or Home Assistant community. While not official support, you may get help from other experienced users.

- **Warranty Coverage** – whatwatt Go comes with a 2-year warranty from date of purchase (assuming typical terms). This covers manufacturing defects or failures that occur under normal usage. If your device fails within this period not due to misuse, contact support for warranty claim. You will likely need proof of purchase (invoice). They may attempt to troubleshoot first, and if determined to be faulty, they will instruct on RMA (Return Merchandise Authorization) process – typically sending the unit in for repair or replacement.

- **Warranty Limitations** – The warranty likely does not cover damage from improper use: e.g., opening the device, physical damage, water damage, using wrong power adapter, etc. It also may not cover issues caused by firmware mods or unofficial software tampering. Always adhere to usage guidelines to keep warranty valid.

- **Repair/Replacement** – If out of warranty, whatwatt may offer repair services for a fee, or you can purchase a new unit. Given the device is relatively low-cost electronics, repair might not be economical unless it's a simple fix. However, always ask – sometimes it could be a known issue with a straightforward solution.

- **Software Updates** – Support may ask you to update firmware to see if an issue is resolved before proceeding with hardware RMA. So ensure you've tried that.

- **Returns** – If you bought the device and it doesn't meet your needs or isn't compatible, check the seller's return policy. That's separate from warranty (which is for faults). Many retailers have a 14-30 day return window if the product is in good condition. But once installed, it's usually considered used – so warranty route for problems, or community for integration help.

- **Legal and Compliance** – whatwatt Go is CE certified, meaning it meets EU safety and EMI standards. It likely also conforms to other regional standards if sold outside EU. Compliance info and certification numbers are usually listed in the manual or on the device. If you need that info (for example, for an installer or an inspection), refer to the Spec section and device label. IP20 means indoor use only.

- **Open Source Acknowledgements** – The device firmware might include open source components. Usually, these are listed on whatwatt's site or an open source page (About us | whatwatt). If interested, you might find a list of licenses there. This doesn't affect usage, but is good to know for curious users.

Finally, always handle the device according to the manual to avoid voiding your warranty. If unsure about anything, asking support before doing something irreversible (like wiring a custom connector) is wise.

We hope this improved manual has provided the guidance you need to successfully set up and use your whatwatt Go. With proper installation, configuration, and the best practices outlined, you'll gain valuable insights into your energy usage and be able to leverage them for efficiency and automation. Enjoy real-time energy monitoring with whatwatt Go!