

Shelly Wave i4 DC LR

Shelly Wave i4 DC US LR Z-Wave Long Range 4 Digital Input Control User Manual

Model: Wave i4 DC LR | Brand: Shelly

1. INTRODUCTION

The Shelly Wave i4 DC US LR is a Z-Wave Long Range 4-digital input controller designed for advanced home automation. This device allows you to manually activate or deactivate scenes, run synchronized actions, and execute complex trigger scenarios within your Z-Wave network. It functions as an input reader and does not contain internal relays. A Z-Wave gateway (smart hub) is required for initial configuration and full functionality.

This manual provides essential information for the safe and efficient use of your Shelly Wave i4 DC US LR, including installation, operation, and troubleshooting.

2. SAFETY INFORMATION

- **Read Carefully:** Before starting installation, read this guide and any other documents accompanying the device. Failure to follow instructions may lead to malfunction, danger to your health or life, violation of law, or refusal of legal and commercial guarantee.
- **Qualified Electrician:** Installation should be performed by a qualified electrician or person with appropriate knowledge and understanding of electrical systems.
- **Power Disconnection:** Ensure the power supply is disconnected before performing any electrical work.
- **Indoor Use Only:** This device is intended for indoor use only.
- **Operating Voltage:** The device operates on 5-24 V DC. Ensure your power supply matches this requirement.
- **Keep Dry:** Do not expose the device to moisture or extreme temperatures.

3. PRODUCT OVERVIEW

The Shelly Wave i4 DC US LR is a compact Z-Wave module designed to enhance your smart home control by providing four digital inputs. It allows you to integrate traditional wall switches or other input devices into your Z-Wave network, enabling complex automation scenarios.

Key Features:

- **4 Digital Inputs:** Connect up to four physical switches or sensors to control various Z-Wave devices or scenes.
- **Z-Wave Long Range (ZWLR) & Z-Wave Plus:** Supports both ZWLR (912MHz) for extended range up to 1.5 miles and Z-Wave Plus (908.4MHz) for broad compatibility.
- **Multi-Action Support:** Each button can trigger up to 3 automation actions, allowing for up to 12 scenes or actions across your Z-Wave network.
- **Direct Device Association:** Trigger up to 8 actions without a gateway by directly associating with other Z-Wave devices (2 associations per button).
- **Compact Design:** Its small size allows for easy installation behind existing wall switches.
- **Efficient Energy Use:** Powered by 5-24 V DC with extremely low power consumption (< 0.3 W).
- **Enhanced Security:** Features Security 2 (S2) Standard for advanced encryption and authentication.



Figure 1: Shelly Wave i4 DC US LR device. This image shows the compact form factor of the Shelly Wave i4 DC US LR module, highlighting its small size and terminal connections.

4. SETUP AND INSTALLATION

Before proceeding with installation, ensure you have a compatible Z-Wave gateway and that the power supply to the circuit is disconnected.

4.1 Device Dimensions

The Shelly Wave i4 DC US LR is designed to be compact for easy integration. Its dimensions are approximately 42mm x 37mm.

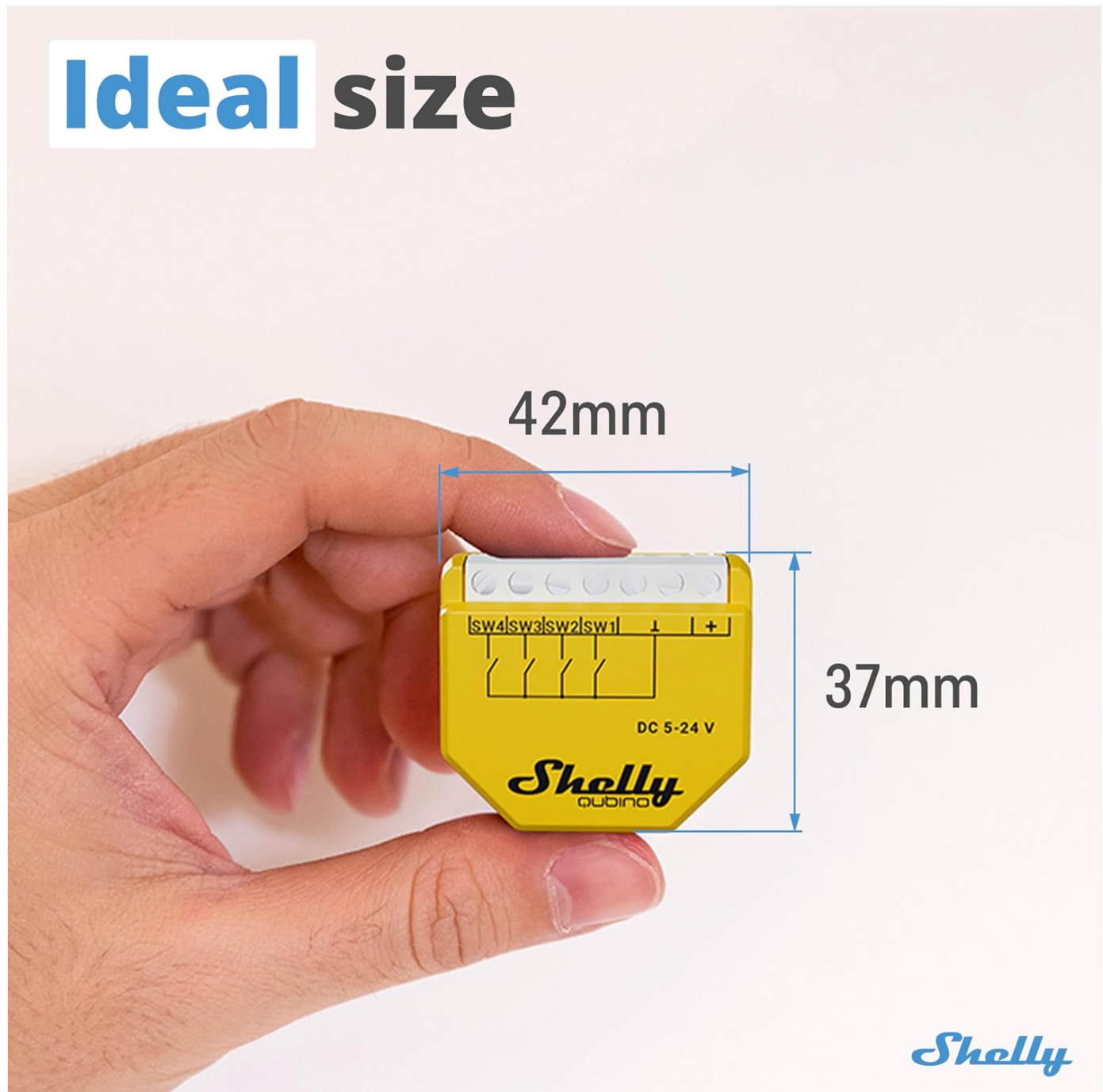


Figure 2: Device dimensions. This image illustrates the compact size of the Shelly Wave i4 DC US LR, showing its length of 42mm and width of 37mm, held in a hand for scale.

4.2 Wiring Diagram and Connections

The device requires a 5-24V DC power supply. It features four digital inputs (SW1, SW2, SW3, SW4) for connecting switches or other input devices.

- **+**: Positive terminal for DC power supply (5-24V DC).
- **-**: Negative terminal for DC power supply.
- **SW1, SW2, SW3, SW4**: Digital input terminals for connecting switches. Connect one side of your switch to the input terminal (e.g., SW1) and the other side to the negative (-) terminal of the power supply.

Always consult a qualified electrician if you are unsure about wiring procedures.

4.3 Pairing with a Z-Wave Gateway

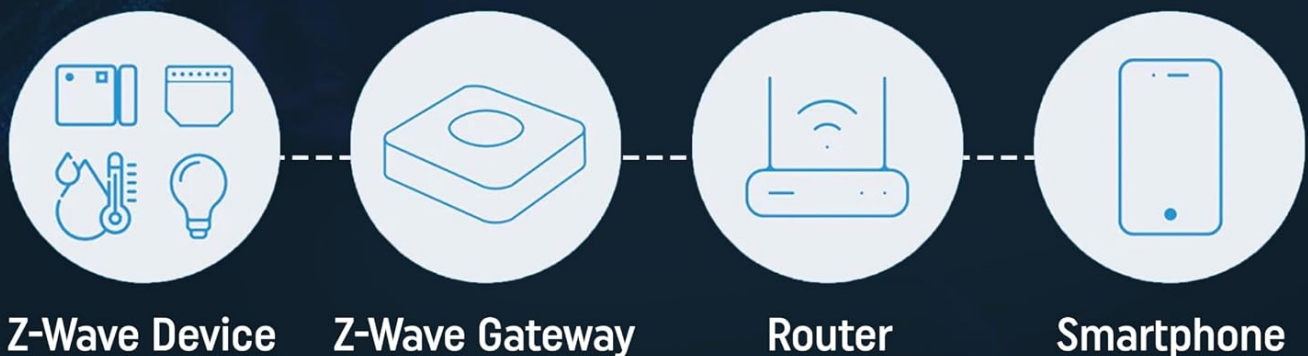
To integrate the Shelly Wave i4 DC US LR into your smart home system, it must be paired with a Z-Wave gateway (hub). The exact pairing process may vary depending on your gateway, but generally involves these steps:

1. **Power On:** Connect the Shelly Wave i4 DC US LR to its 5-24V DC power supply.
2. **Gateway Inclusion Mode:** Put your Z-Wave gateway into inclusion (pairing) mode. Refer to your gateway's manual for specific instructions.
3. **Activate Device Inclusion:** Press the button connected to input SW1 four times quickly within 2 seconds. Alternatively, if no switch is connected, use the device's internal button (if available, consult specific product documentation for button location).
4. **Confirmation:** Your gateway should detect and add the device. Once successfully paired, the device will appear in your gateway's interface.

A Z-Wave Gateway is required for the device to function within a smart home network.

Z-Wave Long Range

- Works on 912MHz (ZWLR) and 908.4MHz (Z-Wave Plus)
- Extended range of up to 1.5 miles
- Supporting scalable networks with up to 4,000 devices
- Z-Wave Gateway required!



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Figure 3: Z-Wave Long Range network setup. This diagram illustrates the components of a Z-Wave Long Range network, including a Z-Wave device (like the Wave i4 DC LR), a Z-Wave Gateway, a router, and a smartphone for control.

5. OPERATING THE DEVICE

The Shelly Wave i4 DC US LR allows you to control various aspects of your smart home through its digital inputs. Each input can be configured to trigger different actions based on button presses.

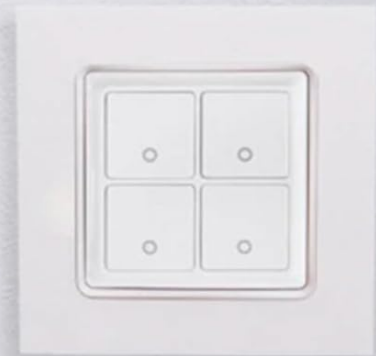
5.1 Multi-Click Functionality

The device supports multiple actions per button press, offering flexible control:

- **Single Click:** Can be configured to turn lights on/off, toggle devices, or activate a specific scene.
- **Long Click:** Can be configured for actions like dimming lights, opening/closing blinds, or activating a different scene.
- **Multiple Clicks:** Up to 3 automation actions can be assigned per button, allowing for complex control with simple

Advanced scene activation

- Trigger up to 8 actions without a gateway
- Seamlessly control multiple Z-Wave devices with a press of a button
 - 1 click
Turn on/off lights
 - 1 long click
Dim lights or open/close blinds



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Figure 4: Advanced scene activation. This image demonstrates how multi-click functionality (1 click, 1 long click) can be used to control Z-Wave devices like turning lights on/off or dimming them, using a standard wall switch.

5.2 Scene Activation and Synchronized Actions

With the Wave i4 DC US LR, you can trigger complex scenes and synchronized actions across multiple Z-Wave devices. This allows for efficient control of your home environment with a single button press.

- **Gateway-Controlled Scenes:** Configure scenes within your Z-Wave gateway that are activated by specific button presses on the Wave i4 DC US LR.
- **Direct Associations:** The device supports 2 associations per button, enabling up to 8 actions to be triggered directly between Z-Wave devices without relying on the gateway for every command.

Complex scenes control

- With Wave i4 DC you can run synchronized actions of several Z-Wave devices, and save your time by pushing of one button



Figure 5: Complex scenes control. This image depicts a house at dusk with lights on, illustrating how the Wave i4 DC can run synchronized actions of several Z-Wave devices with a single button push, saving time and effort.

6. MAINTENANCE

6.1 Cleaning

To clean the device, use a soft, dry cloth. Do not use abrasive cleaners or solvents, as these can damage the device's surface or internal components. Ensure the device is disconnected from power before cleaning.

6.2 Firmware Updates

Periodically check for firmware updates through your Z-Wave gateway or the Shelly Smart Control app. Firmware updates can provide new features, performance improvements, and security enhancements. Follow the instructions provided by your gateway or the Shelly app for updating the device firmware.

7. TROUBLESHOOTING

If you encounter issues with your Shelly Wave i4 DC US LR, refer to the following common problems and solutions:

7.1 Device Not Responding

- **Check Power:** Ensure the device is properly connected to a 5-24V DC power supply and receiving power.
- **Check Wiring:** Verify all wiring connections are secure and correct according to the wiring diagram.
- **Z-Wave Network:** Confirm that the device is still paired with your Z-Wave gateway and that the gateway is operational.
- **Range:** Ensure the device is within range of your Z-Wave gateway or a Z-Wave repeater.

7.2 Pairing Issues

- **Gateway Mode:** Make sure your Z-Wave gateway is in inclusion (pairing) mode.
- **Proximity:** Try to perform the pairing process with the device closer to the gateway.
- **Reset Device:** If pairing fails, try performing a factory reset on the Shelly Wave i4 DC US LR before attempting to pair again.

7.3 Factory Reset

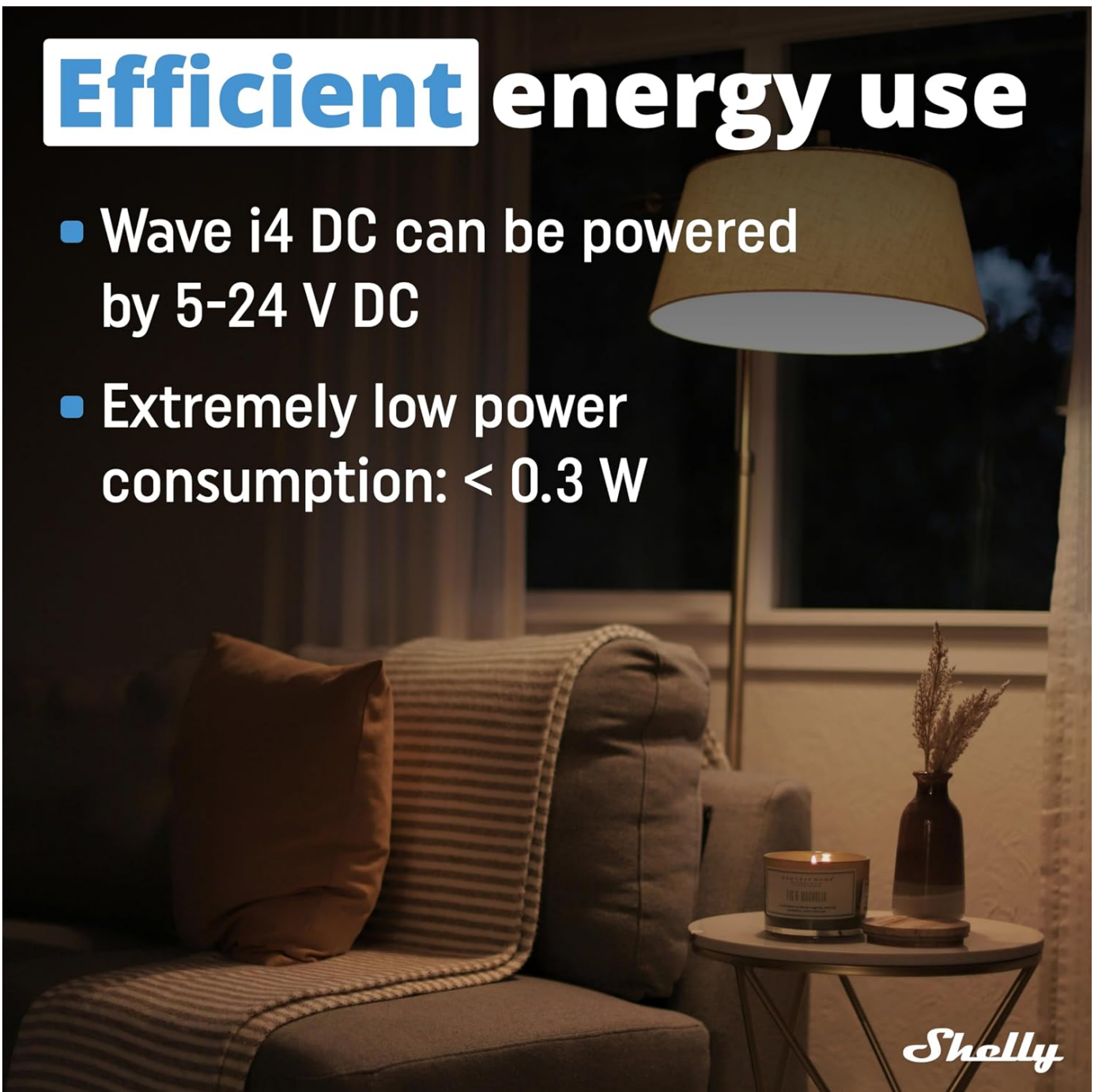
To perform a factory reset, press and hold the button connected to input SW1 (or the internal button) for 10 seconds. The device will indicate a successful reset (e.g., LED flash pattern, consult specific product documentation). This will remove the device from the Z-Wave network and restore it to its default settings.

8. SPECIFICATIONS

Feature	Specification
Model	Wave i4 DC LR
Brand	Shelly
Power Supply	5-24 V DC
Power Consumption	< 0.3 W
Digital Inputs	4
Z-Wave Frequency	912MHz (ZWLR), 908.4MHz (Z-Wave Plus)
Z-Wave Range	Up to 1.5 miles (ZWLR)
Operating Temperature	0°C to 40°C (32°F to 104°F)
Dimensions (H x W x D)	Approximately 37mm x 42mm x 16mm
Weight	0.04 Pounds (approx. 18g)
Material	Plastic
Smart Home Compatibility	Z-Wave (requires gateway)

Efficient energy use

- Wave i4 DC can be powered by 5-24 V DC
- Extremely low power consumption: $< 0.3 \text{ W}$



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Figure 6: Efficient energy use. This image highlights the low power consumption of the Wave i4 DC, stating it can be powered by 5-24 V DC and consumes less than 0.3 W.

Bulletproof security

- Security 2 (S2) Standard - Advanced encryption and authentication, ensuring robust protection against unauthorized access



Figure 7: Bulletproof security. This image emphasizes the Security 2 (S2) Standard, providing advanced encryption and authentication for robust protection against unauthorized access.

9. WARRANTY INFORMATION

The Shelly Wave i4 DC US LR comes with a **3-year manufacturer warranty**. For detailed warranty terms and conditions, please refer to the official Shelly website or contact Shelly customer service.

10. CUSTOMER SUPPORT

For further assistance, technical support, or to access additional resources, please visit the official Shelly support channels:

- **Knowledge Base:** Access product specifications and guidelines.
- **Technical Support:** Contact Shelly's professional support team.

- **Community Forums:** Join Facebook Support Groups and Reddit communities for peer assistance.
- **Shelly Academy:** Explore video tutorials and webinars for in-depth learning.
- **Online Support Portal:** <https://support.shelly.cloud/en/support/home>



Figure 8: Shelly support resources. This image lists various support options including a knowledge base, technical support, Facebook groups, Reddit community, and Shelly Academy with video tutorials.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question