

Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

manuals.plus /

› [Walfront](#) /

› [Walfront Z10/Z20/Z30 Solar Charge Controller User Manual](#)

Walfront Z10/Z20/Z30

Walfront Z10/Z20/Z30 Solar Charge Controller User Manual

Model: Z10, Z20, Z30

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your Walfront Z10, Z20, or Z30 series solar charge controller. This device is designed to manage the power flow from your solar panels to your battery bank, ensuring efficient charging and protecting your battery from overcharge and over-discharge. It features a PWM charging mode, an LCD display for easy monitoring, and dual USB outputs for charging external devices.

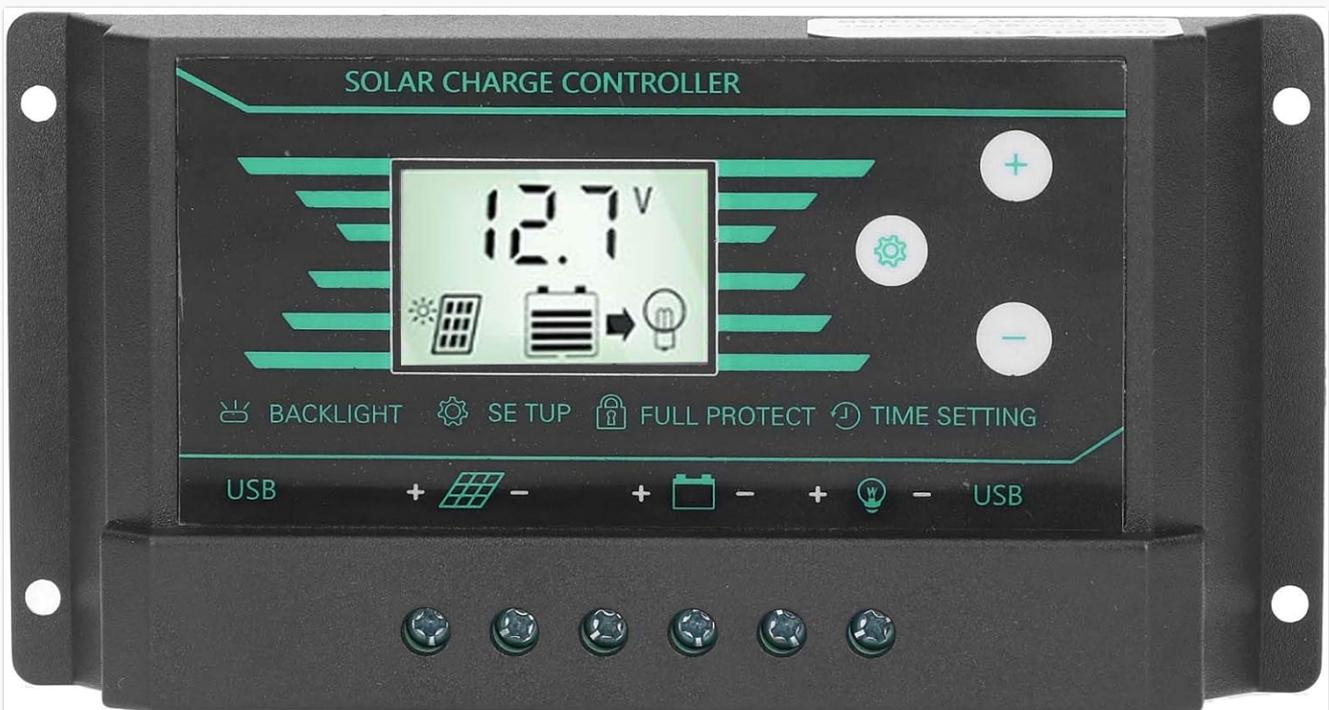


Figure 1: Front view of the Walfront Solar Charge Controller, showing the LCD display and control buttons.

2. SAFETY PRECAUTIONS

- Ensure all wiring is correctly connected before powering on the controller. Incorrect wiring can damage the

device or connected components.

- Always connect the battery first, then the solar panel, and finally the load. Disconnect in the reverse order.
- The controller is designed for 12V/24V lead-acid batteries (GEL, FLOODED, SLD). Do not use with other battery types unless specified.
- Install the controller in a well-ventilated, dry environment, away from direct sunlight and moisture.
- Do not attempt to disassemble or repair the controller yourself. Contact qualified personnel for service.
- Ensure the solar panel's open-circuit voltage (Voc) does not exceed the controller's maximum input voltage.

3. PRODUCT FEATURES

- Automatic identification of 12V/24V system voltage.
- PWM charging mode for efficient battery charging.
- Built-in LCD display for clear status indication and parameter adjustment.
- Dual USB outputs (max 2.5A) for charging mobile devices.
- Comprehensive protection functions: overcharge, over-discharge, overload, short circuit, reverse polarity.
- Automatic memory data storage.
- One-key operation for all settings.



Figure 2: Key features of the solar charge controller, including backlit LCD, dual USB, and various protections.

4. SETUP AND INSTALLATION

Follow these steps carefully to install your solar charge controller:

1. **Prepare Wiring:** Ensure all wires are properly sized for your system's current and voltage. Strip wire ends approximately 8-10mm.
2. **Connect Battery:** Connect the battery to the controller's battery terminals (marked with a battery symbol). Ensure correct polarity (+ to + and - to -). The LCD will light up.
3. **Connect Solar Panel:** Connect the solar panel to the controller's solar panel terminals (marked with a solar panel symbol). Ensure correct polarity.
4. **Connect Load:** Connect the DC load to the controller's load terminals (marked with a light bulb symbol). Ensure correct polarity.

Important: Always connect the battery first, then the solar panel, and finally the load. Disconnect in the reverse order: load, then solar panel, then battery.



Figure 3: Wiring diagram showing connections for solar panels, battery, and DC/AC loads.



Figure 4: Detailed view of the controller's terminals and buttons, including LCD display, USB ports, and wiring connections.

5. OPERATING INSTRUCTIONS

5.1. LCD Display and Buttons

The controller features an LCD display and three buttons: **MENU**, **UP (+)**, and **DOWN (-)**.

- **MENU Button:** Short press to cycle through display modes. Long press (3 seconds) to enter or exit setting mode.
- **UP (+) Button:** In setting mode, increases the parameter value.
- **DOWN (-) Button:** In setting mode, decreases the parameter value.

5.2. Display Modes

Short press the MENU button to cycle through the following display modes:

1. Battery Voltage Display
2. Solar Panel Charging Current Display
3. Load Discharging Current Display
4. Battery Type Setting (b01/b02/b03)
5. Load Working Mode Setting (24H/0-23H/00H)
6. Over-discharge Recovery Voltage Setting
7. Over-discharge Voltage Setting
8. Float Charge Voltage Setting
9. Charge Recovery Voltage Setting
10. Overcharge Protection Voltage Setting
11. USB Output On/Off Setting
12. System Temperature Display

5.3. Parameter Settings

To adjust parameters:

1. Long press the MENU button for 3 seconds to enter setting mode. The current parameter will flash.
2. Use the UP (+) and DOWN (-) buttons to adjust the value.
3. Short press the MENU button to confirm the setting and move to the next parameter.
4. Long press the MENU button again for 3 seconds to exit setting mode. If no operation is performed for 10 seconds, the controller will automatically exit setting mode.

Default Parameters (for 12V system, multiply by 2 for 24V system):

- Battery Type: b01 (Lead-acid)
- Over-discharge Recovery Voltage: 12.6V
- Over-discharge Voltage: 10.7V
- Float Charge Voltage: 13.7V
- Charge Recovery Voltage: 13.0V
- Overcharge Protection Voltage: 14.4V

Battery Type Settings:

- **b01 = FLOODED:** Default (12.6V, 10.7V, 13.7V, 13.0V, 14.4V)
- **b02 = GEL:** (12.4V, 10.6V, 13.5V, 12.8V, 14.2V)
- **b03 = SLD (Sealed Lead-Acid):** (12.6V, 10.8V, 13.8V, 13.2V, 14.6V)

Load Working Mode Settings:

- **24H:** Load always on.
- **0-23H:** Load on for a set number of hours after sunset. (e.g., 08H for 8 hours)
- **00H:** Load controlled by light sensor (dusk to dawn).

6. MAINTENANCE

To ensure optimal performance and longevity of your solar charge controller, perform the following maintenance checks periodically:

- **Clean Terminals:** Inspect all terminals for corrosion, loose connections, or damage. Clean as necessary.
- **Check Wiring:** Ensure all wires are securely connected and free from damage.
- **Ventilation:** Ensure the controller's installation area is well-ventilated and free from dust or debris that could obstruct airflow.
- **Environmental Check:** Verify that the controller is not exposed to excessive moisture, direct sunlight, or extreme temperatures.
- **Battery Health:** Monitor battery voltage and health. Ensure the battery is not overcharged or over-discharged.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
LCD not displaying	Battery not connected or low voltage.	Check battery connections and ensure battery voltage is above the minimum operating voltage.
Battery not charging	Solar panel not connected, low sunlight, or incorrect polarity.	Check solar panel connections, ensure sufficient sunlight, verify polarity.
Load not working	Load not connected, over-discharge protection active, or load working mode setting.	Check load connections, verify battery voltage, adjust load working mode settings.
USB output not working	USB output disabled in settings or overcurrent protection.	Check USB output setting in operating instructions. Reduce connected load.
Controller overheating	Poor ventilation or excessive load/charging current.	Ensure adequate ventilation. Reduce load or charging current if consistently high.

8. SPECIFICATIONS

Parameter	Value
Model	Z10, Z20, Z30 (depending on amperage)
System Voltage	12V/24V Auto-adaptation
Max. Charge/Discharge Current	10A/20A/30A (depending on model)
USB Output	Dual USB, 5V/2.5A (Max)

Parameter	Value
Battery Type	Lead-acid (FLOODED, GEL, SLD)
Overcharge Protection	14.4V (12V system, adjustable)
Over-discharge Protection	10.7V (12V system, adjustable)
Float Charge Voltage	13.7V (12V system, adjustable)
Operating Temperature	-35°C to +60°C
Material	Plastic
Item Weight	Approximately 4.6 ounces



Figure 5: Dimensions of the Walfront Solar Charge Controller.

9. WARRANTY AND SUPPORT

Walfront products are designed for reliability and performance. For warranty information or technical support, please refer to the contact details provided with your purchase or visit the official Walfront website. Please have your model number (Z10, Z20, or Z30) and purchase details ready when contacting support. For further assistance, you may contact your seller directly via the Amazon platform.

Related Documents - Z10/Z20/Z30

 	<p>JURA Z10 Gebruiksaanwijzing: Handleiding voor uw Volautomatische Koffiemachine</p> <p>Ontdek de JURA Z10 volautomatische espressomachine met deze uitgebreide gebruiksaanwijzing. Leer hoe u uw machine installeert, bedient, onderhoudt en de vele koffiespecialiteiten bereidt.</p>
 	<p>JURA Z10 Kaffeevollautomat Bedienungsanleitung</p> <p>Umfassende Bedienungsanleitung für die JURA Z10 Kaffeevollautomat. Erfahren Sie alles über Einrichtung, Bedienung, Wartung und Fehlerbehebung für perfekten Kaffeegenuss.</p>
	<p>Amcrest SmartHome 4MP WiFi Outdoor Camera Quick Setup Guide</p> <p>A quick setup guide for the Amcrest SmartHome 4MP WiFi Outdoor Camera, detailing steps for installation and connection to the SmartHome app.</p>
 	<p>Manuel d'utilisation Machine à Café JURA Z10</p> <p>Manuel d'utilisation complet pour la machine à café JURA Z10, couvrant l'installation, l'utilisation, l'entretien, le dépannage et les spécifications techniques.</p>
	<p>Porównanie Odtwarzaczy Multimedialnych Zidoo: Modele i Specyfikacje</p> <p>Przewodnik porównujący zaawansowane odtwarzacze multimedialne marki Zidoo. Dokument zawiera szczegółowe dane techniczne, takie jak procesor, GPU, pamięć, łączność, dekodowanie wideo i audio, aby pomóc w wyborze idealnego urządzenia.</p>
 <i>Guide de résolution de problème pour votre Formuler</i> Résolution de problème à faire en premier Si vous avez des questions ou des problèmes, contactez-nous à l'adresse suivante : 1. Vérifiez que vous êtes connecté à Internet. 2. Vérifiez que votre appareil est correctement configuré. 3. Vérifiez que votre appareil est correctement configuré. Mises à jour Avant de résoudre un problème, assurez-vous d'être bien connecté à Internet et d'effectuer les mises à jour disponibles.	<p>Guide de Résolution de Problèmes pour votre Décodeur Formuler Oh-Ben TV</p> <p>Résolvez les problèmes courants de votre décodeur Formuler avec ce guide détaillé. Couvre la connexion Wi-Fi, les mises à jour, les erreurs d'abonnement, les problèmes de son, l'enregistrement et plus encore.</p>