

## Irfora 150A White

# Irfora 150A MPPT Solar Controller User Manual

Model: 150A White

Brand: Irfora

## 1. INTRODUCTION AND OVERVIEW

The Irfora 150A MPPT Solar Controller is an advanced intelligent regulator designed to optimize the charging process of batteries in solar power systems. It is compatible with 12V, 24V, 36V, and 48V battery systems and supports various battery types including lithium-ion, lithium iron phosphate (LiFePO4), and acid batteries. Utilizing Maximum Power Point Tracking (MPPT) technology, this controller ensures efficient energy harvest from your solar panels, extending battery lifespan and enhancing overall system performance. It features a clear LCD display for real-time monitoring and dual USB outputs for convenient device charging.



Figure 1.1: Front view of the Irfora 150A MPPT Solar Controller, showing the LCD display and connection terminals.

## 2. KEY FEATURES

- **Universal Voltage Compatibility:** Automatically detects and supports 12V, 24V, 36V, and 48V battery systems.
- **Wide Battery Type Support:** Compatible with lithium-ion, lithium iron phosphate (LiFePO4), and acid batteries.
- **Maximized Charging Efficiency:** Employs MPPT technology for quick and efficient charging, optimizing energy harvest from solar panels.
- **Versatile Operating Modes:** Offers multiple modes including auto, light-controlled, test, manual, timer, universal, and light-controlled with delay for flexible energy management.
- **Comprehensive Safety Features:** Built-in protections against overvoltage, overcurrent, overtemperature, overload, and short circuits. Automatic disconnect prevents overcharging.
- **Intuitive LCD Display:** Provides real-time information on output voltage, battery level, mode status, and system

health.

- **Dual USB Charging Ports:** Conveniently power smartphones, tablets, and cameras directly from your solar system.
- **Automatic Memory Data Storage:** Ensures smooth operation and retains settings during power cycles.

### 3. SAFETY INFORMATION

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Please read and understand all safety instructions before installing or operating the solar controller. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure all connections are secure and correctly polarized to prevent damage to the controller, battery, or solar panels.
- Do not attempt to disassemble or repair the controller yourself. Refer to qualified personnel for service.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- Protect the controller from water and excessive humidity.
- Always disconnect the solar panel and battery power before performing any maintenance or wiring changes.
- The controller is equipped with internal protection mechanisms against overvoltage, overcurrent, overtemperature, overload, and short circuits. However, proper system design and external fusing are recommended for enhanced safety.

### 4. PRODUCT COMPONENTS AND PACKAGE CONTENTS

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The package for your Irfora 150A MPPT Solar Controller should contain the following items:

- 1 x Irfora 150A MPPT Solar Controller
- 1 x User's Manual (this document)

Please inspect all components upon receipt to ensure they are present and undamaged.

### 5. SETUP AND INSTALLATION

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Follow these steps for proper installation of your solar charge controller. Ensure all power sources are disconnected before beginning wiring.

1. **Mounting:** Choose a suitable location for mounting the controller. It should be indoors, dry, well-ventilated, and protected from direct sunlight and extreme temperatures.
2. **Battery Connection:** Connect the battery to the controller first. Ensure correct polarity: connect the positive (+) terminal of the battery to the battery positive terminal on the controller, and the negative (-) terminal of the battery to the battery negative terminal on the controller. This step is crucial for the controller to detect the system voltage.
3. **Solar Panel Connection:** Connect the solar panel(s) to the controller. Connect the positive (+) terminal of the solar panel array to the solar panel positive terminal on the controller, and the negative (-) terminal to the solar panel negative terminal on the controller.
4. **Load Connection (Optional):** If you are connecting a DC load directly to the controller, connect the load to the load terminals on the controller, ensuring correct polarity.

# Solar Charge Controller

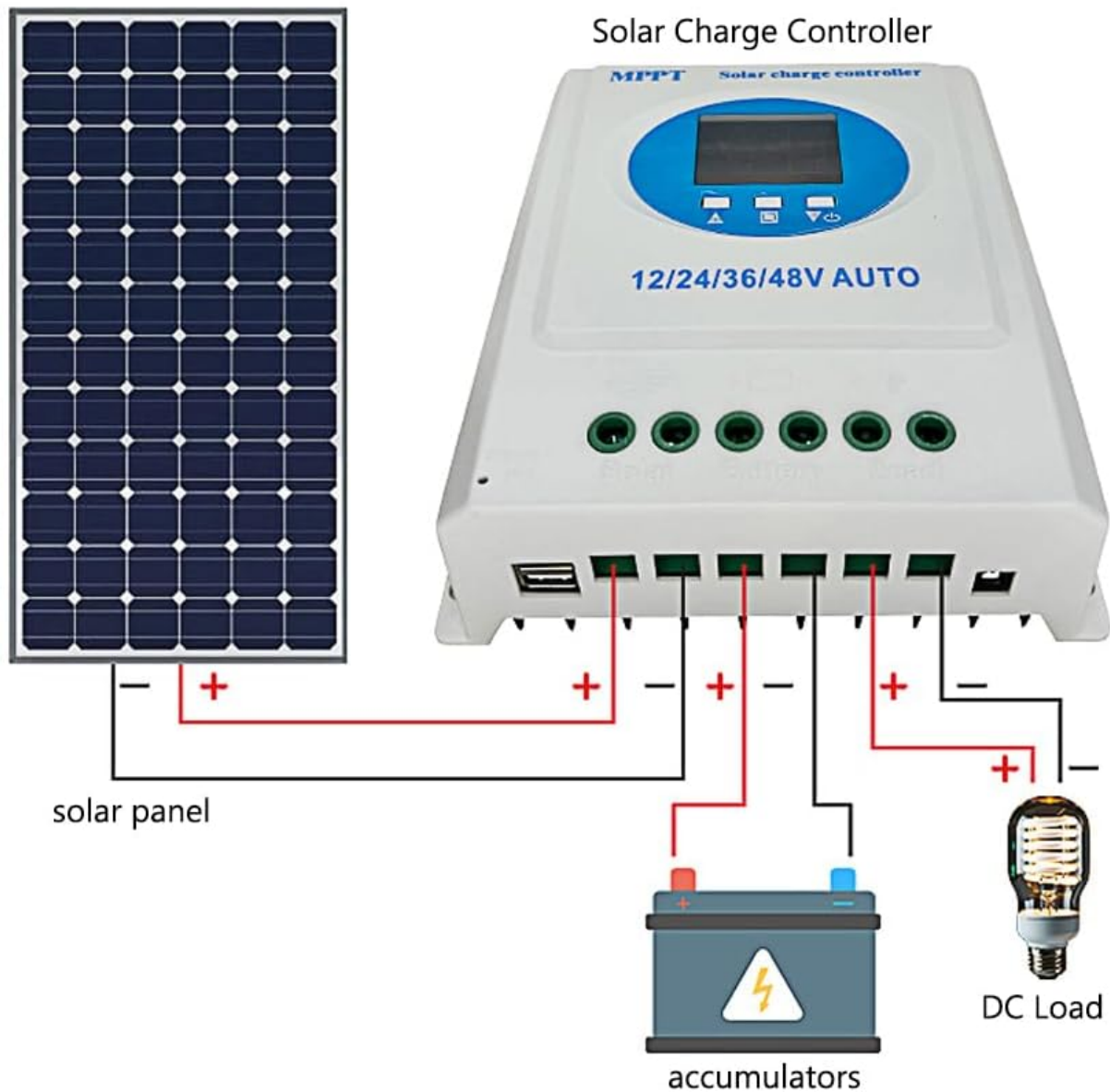


Figure 5.1: Wiring diagram showing connections for solar panel, battery, and DC load to the solar charge controller.

**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.

## 6. OPERATING INSTRUCTIONS

### 6.1 LCD Display Overview

The clear LCD display provides real-time information about your solar system's status.

# Intuitive LCD Display

The clear LCD display provides real-time information on output voltage, battery level, mode status, and system health.



Figure 6.1: Detailed view of the LCD display, indicating battery level, solar panel charging, load identification, mode control, and normal/fault display areas.

- **Battery Level Marking:** Indicates the current charge level of the connected battery.
- **Solar Panel Charging Marking:** Shows the current input from the solar panels.
- **Load Identification:** Displays the status of the connected DC load.
- **Mode Control Display Area:** Allows selection and display of various operating modes.
- **Normal/Fault Display Area:** Indicates normal operation or displays error codes if a fault occurs.

## 6.2 Operating Modes

The controller offers multiple operating modes to suit different application needs. These modes can be selected via the display interface.

# VERSATILE OPERATING MODES FOR COMPLETE CONTROL

Equipped with multiple operation modes including auto, light-controlled, test, manual, timer, universal, and light-controlled with delay, the controller offers unparalleled flexibility to tailor your charging experience.



Figure 6.2: The controller's interface showing options for selecting various operating modes.

- **Auto Mode:** Standard automatic operation.
- **Light-Controlled Mode:** Load output is controlled by ambient light levels (e.g., turns on at dusk, off at dawn).
- **Test Mode:** For testing purposes.
- **Manual Mode:** Allows manual control of the load output.
- **Timer Mode:** Load output operates for a set duration.
- **Universal Mode:** General purpose mode.
- **Light-Controlled with Delay Mode:** Similar to light-controlled but with a customizable delay.

## 6.3 Dual USB Charging

The controller is equipped with dual USB ports (5V, 1A) for convenient charging of external devices such as smartphones, tablets, and cameras.



# Dual USB Charging

With dual USB ports, keep your devices powered up, from smartphones to tablets and cameras, directly from your solar system.



Figure 6.3: Close-up view of the dual USB charging ports located on the side of the controller.

## 7. MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your solar charge controller.

- **Cleaning:** Periodically clean the controller's exterior with a dry, soft cloth to remove dust and dirt. Do not use liquid cleaners.
- **Connection Check:** Annually inspect all wiring connections to ensure they are tight and free from corrosion. Loose connections can cause overheating and poor performance.
- **Visual Inspection:** Check for any signs of physical damage, discoloration, or unusual odors. If any issues are observed, disconnect power immediately and consult a qualified technician.
- **Ventilation:** Ensure that the area around the controller remains clear to allow for proper airflow and heat dissipation.

## 8. TROUBLESHOOTING

If you encounter issues with your solar controller, refer to the following common problems and solutions.

Problem	Possible Cause	Solution
Controller display is off / No power	Battery not connected or low voltage; reversed battery polarity; loose connections.	Check battery connections and voltage. Ensure battery is connected first and correctly. Tighten all terminals.
Battery not charging	Solar panel not connected or insufficient sunlight; reversed solar panel polarity; damaged solar panel or wiring.	Verify solar panel connections and polarity. Ensure adequate sunlight. Check solar panel output voltage.
Load not working	Load not connected or reversed polarity; battery voltage too low; overload protection activated; load mode setting incorrect.	Check load connections and polarity. Ensure battery has sufficient charge. Reduce load. Adjust operating mode settings.
Error code on display	Specific system fault (e.g., overvoltage, short circuit).	Refer to the controller's specific error code definitions (if available in a more detailed manual) or disconnect all power, wait a few minutes, and reconnect. Address the underlying issue (e.g., reduce voltage, fix short).

If the problem persists after attempting these solutions, please contact customer support.

## 9. SPECIFICATIONS

Detailed technical specifications for the Irfora 150A MPPT Solar Controller:





## Specifications:

Color: White/Blue(optional)

Material: ABS

Rated Charging Current: 100A/120A/150A(optional)

Rated Output Current: 30A/40A/50A

USB Output: 5V, 1A

Solar Panel PV Input PeakPower: 100A: <1200W

120A: <1440W

150A: <1800W

Operating Temperature: 0~60°C

Storage Temperature: -15~50°C

Humidity: 0-90% Non-Condensing

Item Size: 195 \* 183 \* 68mm/ 7.7 \* 7.2 \* 2.7in

Figure 9.1: Diagram illustrating the physical dimensions and a summary of key specifications.

Parameter	Value
Rated Charging Current	150A (also available in 100A/120A variants)
Rated Output Current	50A (also available in 30A/40A variants)
USB Output	5V, 1A (Dual USB ports)
Solar Panel PV Input Peak Power (for 150A)	<1800W
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)
Storage Temperature	-15°C ~ 50°C (5°F ~ 122°F)
Humidity	0-90% Non-Condensing
Material	ABS
Item Size	195 x 183 x 68 mm (7.7 x 7.2 x 2.7 inches)

Parameter	Value
Package Size	205 x 205 x 70 mm (8.1 x 8.1 x 2.8 inches)
Package Weight (for 150A)	900g (31.7oz)

## 10. WARRANTY AND SUPPORT


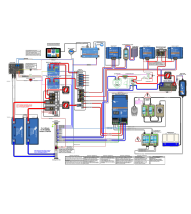
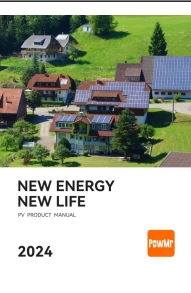
For warranty information and customer support, please refer to the purchase documentation or contact the seller/manufacturer directly.



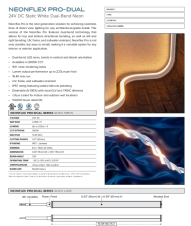
**Brand:** Irfora

For technical assistance or inquiries, please reach out to the official Irfora support channels.

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### Related Documents - 150A White

	<p><a href="#">REDODO 250A/150A Switchable Circuit Breaker Product Manual</a></p> <p>This manual provides detailed information on the REDODO 250A/150A Switchable Circuit Breaker, including product overview, dimensions, installation steps, technical specifications, and performance data for various voltage and current conditions.</p>
	<p><a href="#">Victron Energy Power System Diagram and Component Guide</a></p> <p>Detailed system diagram illustrating the integration of Victron Energy MultiPlus-II inverter/charger, Smart MPPT solar charge controller, BMV-712 Smart battery monitor, Orion-Tr Smart DC-DC chargers, Smart Battery Protect, and Cerbo GX for a 12V DC and 120V AC power system. Includes component connections, fuse ratings, and important installation notes.</p>
	<p><a href="#">PowMr Solar Product Manual 2024: Controllers, Inverters, Batteries &amp; Systems</a></p> <p>Comprehensive product manual from PowMr detailing their range of solar controllers, inverters, batteries, and energy storage systems for residential and commercial applications. Includes technical specifications, company profile, and product catalog.</p>

 <p>The image shows a blue wall-mounted battery charger with a digital display and control buttons. Above it is a photograph of a yellow forklift in a warehouse setting, indicating the charger's application in industrial environments.</p>	<p><a href="#">TOMMATECH SRJ-TT-AC-DVR-48V-150ADVR Batterie-Ladegerät - Technische Daten und Anschluss</a></p> <p>Technische Spezifikationen, Anschlussanleitung und Einsatzbereiche für das TOMMATECH SRJ-TT-AC-DVR-48V-150ADVR Wandmontage Batterie-Ladegerät 48V 150A.</p>
 <p>The image is the cover of a product manual for a Li Time 12.8V 165Ah Dual Purpose LiFePO4 battery. It features a blue and white design with the text 'Self-Heating' and 'Li Time'.</p>	<p><a href="#">Li Time 12.8V 165Ah Dual Purpose LiFePO4 Battery Product Manual</a></p> <p>Comprehensive product manual for the Li Time 12.8V 165Ah Dual Purpose Lithium Iron Phosphate (LiFePO4) battery, covering specifications, parameters, connections, and troubleshooting.</p>
 <p>The image shows a technical document for the Neonflex Pro-Dual 24V DC Static White LED Neon Lighting. It includes a photograph of the flexible LED strip and a detailed technical specification table.</p>	<p><a href="#">Neonflex Pro-Dual 24V DC Static White LED Neon Lighting</a></p> <p>Discover the Neonflex Pro-Dual, a next-generation LED neon lighting solution from American Lighting. Featuring dual-bend technology for versatile installation, UV, flame, and saltwater resistance, and a 50,000-hour rated life, it's ideal for architectural-grade interior and exterior applications.</p>