

EPsolar EPIPDB-COM-10A

User Manual

DUAL BATTERY SOLAR CHARGE CONTROLLER

Model: EPIPDB-COM-10A

Brand: EPsolar

1. OVERVIEW

The EPsolar EPIPDB-COM-10A is a dual battery solar charge controller designed for 12V/24V automatic system voltage detection. It is suitable for various off-grid solar applications, including RVs, caravans, and boats. This controller efficiently manages solar panel input to charge two independent battery banks, ensuring optimal power distribution and protection. Key features include support for various battery types (sealed, gel, flooded), intelligent system optimization, and multiple electronic protections.



Figure 1: Front view of the EPsolar EPIPDB-COM-10A Dual Battery Solar Charge Controller, showing the display, LED indicators, and connection terminals.

2. SAFETY INSTRUCTIONS

- Ensure all connections are correct and secure before operation. Incorrect wiring can cause damage to the controller, batteries, or solar panels.
- Always connect the battery first, then the solar panel. Disconnect in the reverse order: solar panel first, then battery.
- Do not attempt to repair or modify the controller. Refer to qualified personnel for service.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- Wear appropriate personal protective equipment (PPE) when working with electrical systems.
- The controller is designed for specific voltage and current ratings. Do not exceed these limits.

3. PRODUCT FEATURES

- **Dual Battery Charging:** Eliminates the need for two separate solar charging systems, optimizing space and cost.
- **Automatic Voltage Detection:** Supports 12V/24V system auto-work.
- **Battery Type Selection:** Compatible with Sealed, Gel, and Flooded battery types.
- **High-Efficiency PWM Charging:** Utilizes Series PWM charging for effective battery management.
- **Local External Temperature Compensation:** Includes a built-in temperature sensor for accurate charging. Remote temperature sensor is optional.
- **Electronic Protections:** Features over-charging, short-circuit, and battery reverse polarity protection.
- **Remote Meter Compatibility:** Supports optional MT-1 remote meter for monitoring.

Major feature of duo-battery controller

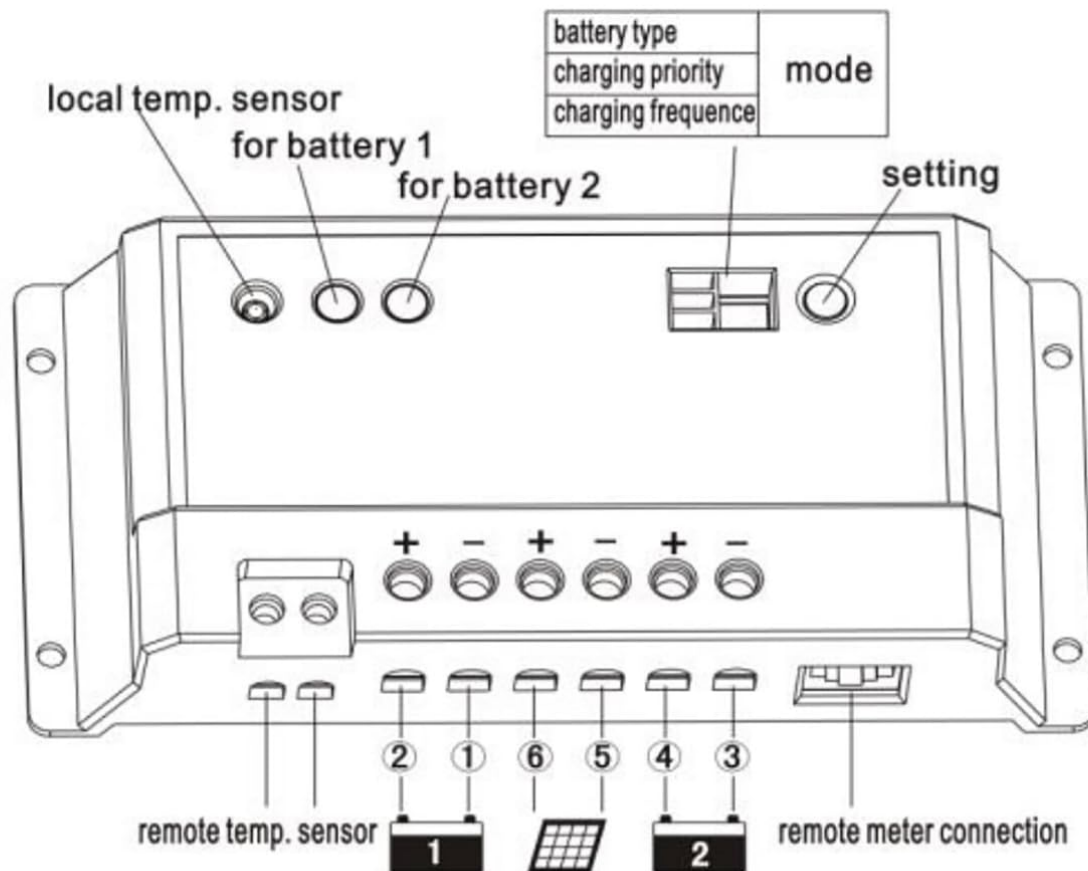


Figure 2: Diagram illustrating the major features and connection points of the dual battery controller.

4. SETUP AND INSTALLATION

Follow these steps for proper installation:

1. **Mounting:** Choose a suitable location for the controller, ensuring adequate ventilation and protection from moisture and direct sunlight.
2. **Connect Battery 1:** Connect the positive and negative terminals of Battery 1 to the corresponding Battery 1 terminals on the controller. Ensure correct polarity.
3. **Connect Battery 2:** Connect the positive and negative terminals of Battery 2 to the corresponding Battery 2 terminals on the controller. Ensure correct polarity.
4. **Connect Solar Panel:** Connect the positive and negative terminals of your solar panel array to the PV input terminals on the controller. Ensure correct polarity.
5. **Remote Temperature Sensor (Optional):** If using, connect the remote temperature sensor to the designated port. This improves charging accuracy.
6. **Remote Meter (Optional):** If using, connect the remote meter to the 'remote meter connection' port.



Figure 3: Side view of the controller, highlighting the connection terminals for batteries, solar panel, remote temperature sensor, and remote meter.

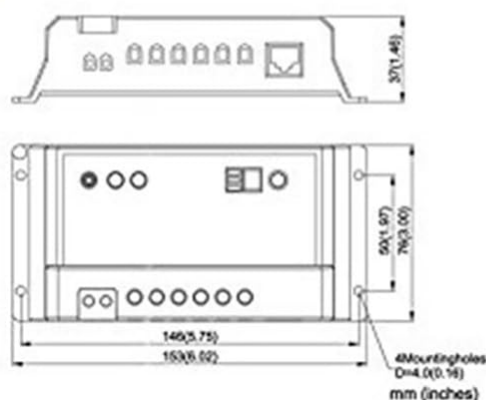
3. 3rd led is for charging frequency.

Number shows	PWM Charging frequency
0	25Hz(pre-set)
1	50Hz
2	100Hz

TROUBLESHOOTING

1. LED blinking, short circuit, check the PV and battery, and make sure that they are in correct connection.
2. LED slowly flashing, fully charged.
3. LED ON, on charging.
4. LED frequent flashing, with battery, no charging.
5. LED OFF, no battery or over voltage.

MECHANICAL DRAWING



INSTRUCTION MANUAL

----- duo-battery charging solar controller,
For RVs, Caravans, and boats
-----EPIP20-DB series



RATINGS (12V or 12/24V auto work)

EPIP20-DB, 12V or 12/24V auto-work, 10Amp
EPIP20-DB 12V or 12/24V auto-work, 20Amp
NOTES: For use with solar panels only



Figure 4: Example application diagram demonstrating the solar charge controller integrated into a bus system with solar panels and dual batteries.

5. OPERATING INSTRUCTIONS

The controller features three LEDs for setting parameters:

- **1st LED: Battery Type Setting**

This LED indicates the selected battery type. Press the setting button to cycle through options: 1 (Sealed, pre-set), 2 (Gel), 3 (Flooded).

- **2nd LED: Charging Priority Setting**

This LED allows you to set the charging priority percentage for Battery #1. The controller automatically calculates the remaining percentage for Battery #2. For example, if you set 60% for Battery #1, Battery #2 will receive 40%.

- **3rd LED: Charging Frequency Setting**

This LED controls the PWM charging frequency. Options include 0 (25Hz, pre-set), 1 (50Hz), and 2 (100Hz).

In normal charging status, the controller divides the charge according to your settings. If Battery #1 is fully charged, more current will be diverted to Battery #2. If only one battery is detected, all charging will go to that battery.



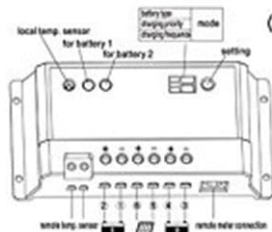
Figure 5: Close-up view of the controller's LED display and setting buttons for configuration.

TECHNICAL INFORMATION

	Sealed battery	Flooded battery	Gel battery
● Setpoint			
● Regulation voltage	14.2V	14.4V	14.6V
● Boost voltage	14.4V	14.6V	14.8V
● Float voltage	13.7V	13.7V	13.7V
● Maximum solar voltage	30V(or 55V)		
● Battery voltage range	1-15V		
● Boost time	30 minutes		
● Self-consumption	4mA at night, 10mA at charging		
● Meterbus connection	8-pin RJ-45		
● Temp. compensation	-30mV/°C/12V		
● Terminals	4mm ²		
● Temperature	-35°C to +55°C		

Note: all the data is for 12V, for 24V, please use 2x.

MAJOR FEATURE



(Note: connect the components as the 1-6)

- 1 Connect with the battery #1
- 2 Connect with the battery #2
- Connect with the PV

Remote temp. sensor

A connection point for RTS(option) to remotely monitor battery temperature.

Local temp. sensor

Measures ambient temperature. Battery regulation is adjusted accordingly.

For battery 1

Provides charging & battery status and errors

For battery 2

Provides charging & battery status and errors

Remote meter connection(option)

A communication port for the remote meter.

Note: where is no RTS, the controller calculate the data which got from the local temp. sensor. The controller will come to RTS automatically when the RTS was connected.

SETTING MODE

Battery type	mode
Charging priority	
Charging frequency	

1. 1st led is the battery type setting.

Number shows	Battery type
1	Sealed battery(pre-set)
2	Gel batter
3	Flooded battery

2. 2nd led is for charging priority, only set the percentage you want for battery #1, the controller will automatically calculate the rest for battery #2.

Number shows	Battery #1 charging	Battery #2 charging
0	0%	100%
1	10%	90%
2	20%	80%
3	30%	70%
4	40%	60%
5	50%	50%
6	60%	40%
7	70%	30%
8	80%	20%
9	90%(pre-set)	10%

Note: in the normal charging status, the controller will divide the charging as the setting. While battery #1 is fully charged, more charge current will be diverted to battery #2, and return to the setting charging automatically when the battery #1 is in low voltage. When the controller detects there is only battery #1, all the charging will go to the battery #1 automatically.

Figure 6: Detailed table outlining the setting modes for battery type, charging priority, and charging frequency.

6. MAINTENANCE

- Periodically inspect all wiring and connections for tightness and corrosion.
- Keep the controller clean and free from dust and debris. Use a dry cloth for cleaning.
- Ensure the ventilation openings are not obstructed to prevent overheating.
- Check battery terminals for any signs of wear or damage.

7. TROUBLESHOOTING

Refer to the following common issues and solutions:

- LED Blinking, Short Circuit:** Check the PV (solar panel) and battery connections for proper wiring and ensure no short circuits are present.
- LED Slowly Flashing, Fully Charged:** This indicates that the batteries are fully charged.
- LED ON, Charging:** The controller is actively charging the batteries.
- LED Frequent Flashing, With Battery, No Charging:** This may indicate an issue with the solar panel input or a fault. Verify solar panel connection and output.
- LED OFF, No Battery or Over Voltage:** Check if batteries are connected correctly. If connected, verify battery voltage is within the controller's operating range.

8. SPECIFICATIONS

Parameter	Value
Model	EPIPDB-COM-10A
Rated Charge Current	10A
Rated Load Current	10A
Work Voltage	12V/24V Auto
Max Solar Voltage	30V (or 55V)
Battery Voltage Range	1-15V
Boost Time	30 minutes
Self-consumption	4mA at night, 10mA at charging
Meterbus Connection	8-pin RJ-45
Temp. Compensation	-30mV/°C/12V
Terminals	4mm ²
Temperature Range	-35°C to +55°C
Product Dimensions	6.02 x 2.99 x 1.46 inches

Note: All data is for 12V. For 24V systems, please multiply voltage values by 2.

9. WARRANTY AND SUPPORT

For warranty information and technical support, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase. Specific warranty terms and conditions may vary by region and retailer.

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

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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