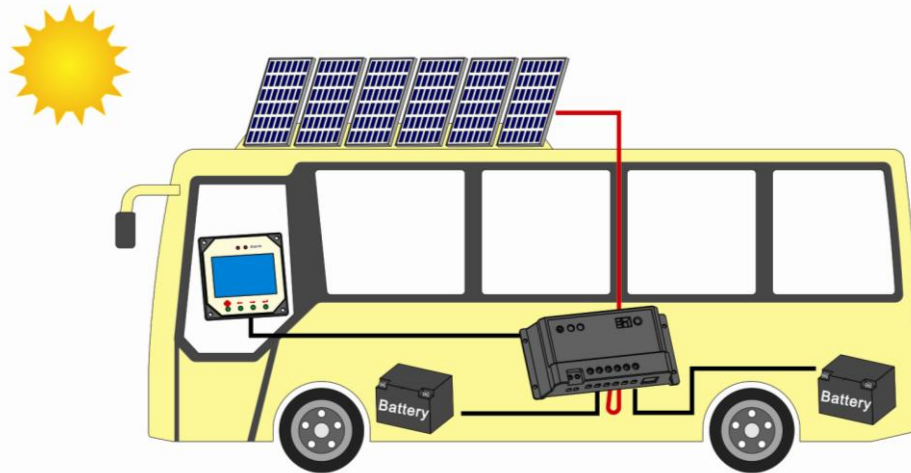


# INSTRUCTION MANUAL

----- duo-battery charging solar controller,

For RVs, Caravans, and boats

-----EPIP20-DB series



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

EPIP20-2B, 12V or 12/24V auto-work, 10Amp

EPIP20-2B 12V or 12/24V auto-work, 20Amp

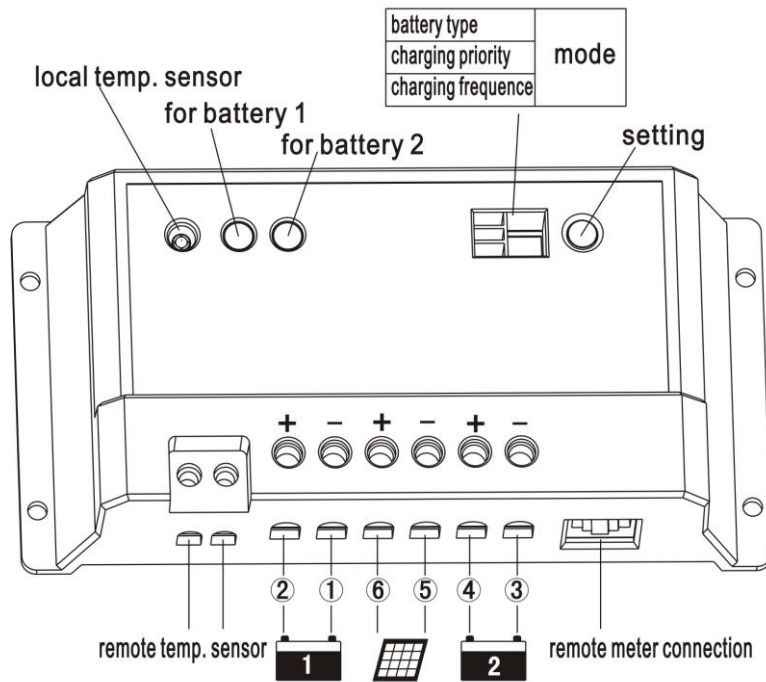
**NOTES: For use with solar panels only**

## **TECHNICAL INFORMATION**

Setpoint	Sealed battery	Flooded battery	Gel battery
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/12V		
Terminals	4mm <sup>2</sup>		
Temperature	-35°C to +55°C		

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

## **Major feature of duo-battery controller:**



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



**Connect with the battery #1**



**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

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	

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Three leds flashing, each LED express different specifications, choose the LED first according to the following information, and then press the switch for 5 seconds until the number flashing, choose one number as you need, and leave it and the number you set will be saved.

- 1<sup>st</sup> led is the battery type setting,

Number shows	Battery type
1	Sealed battery
2	Gel battery
3	Flooded battery

- 2<sup>nd</sup> 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.

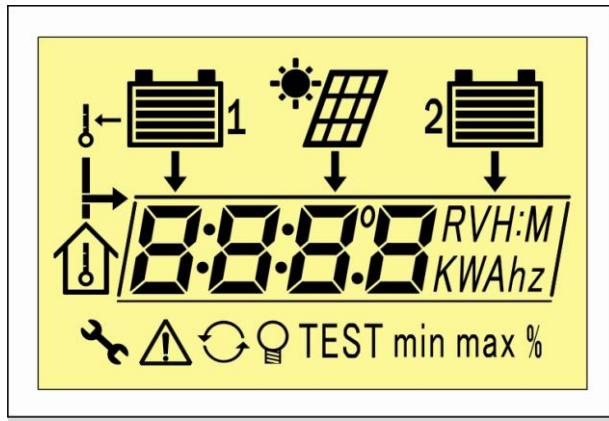
- 3<sup>rd</sup> led is for charging frequency.

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, no charging, and there is battery
5. LED OFF, no battery or over voltage.

**REMOTE METER DISPLAY:**



**MECHANICAL DRAWING:**

