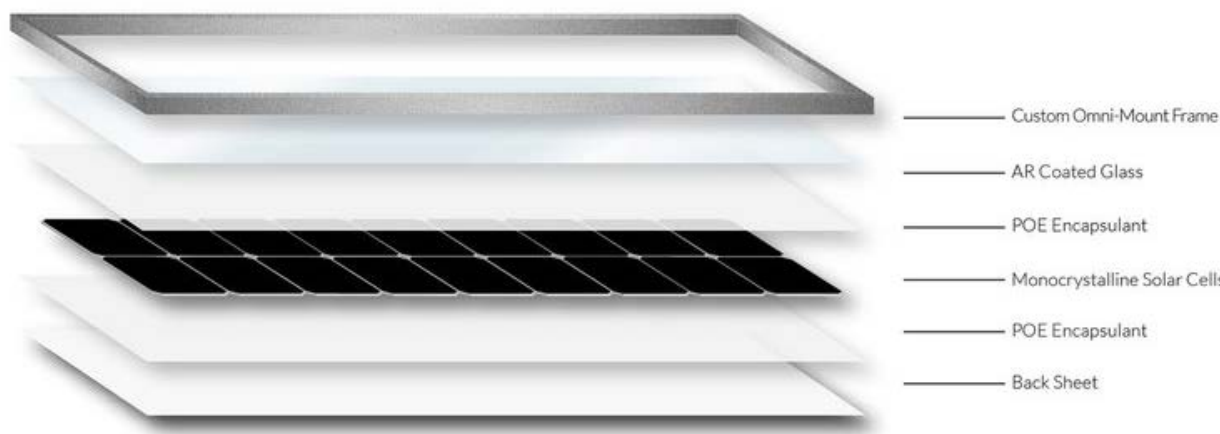


How Zamp Solar Panels Work:

Panel Breakdown

Each component of our solar panels have been thoroughly thought out and selected to create the best solar panels on the market.

- The anti-reflective coated glass increase light transmission while also providing durable protection from harsh weather conditions, making for a more efficient panel.
- The anodized aluminum Omni-Mount frame removes the need to attach mounting feet at predetermined locations along the panel frame. Instead, you can choose the best mounting location for your specific needs.
- Grade A monocrystalline solar cells are used in all Zamp panels to create the highest performing and most reliable solar panels possible.

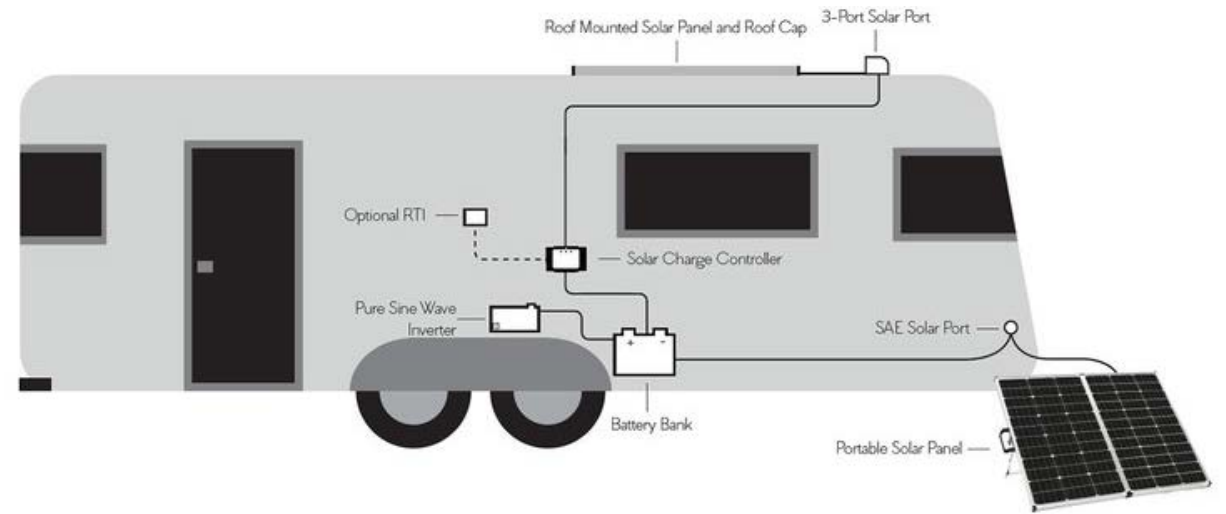


Innovation

Whether it is the easy view charge controller or the sturdy tilt leg, Zamp Solar has a history of innovating the best solutions to make life easier for you. At Zamp we push to find creative solutions for the problems other companies choose to ignore.


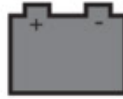

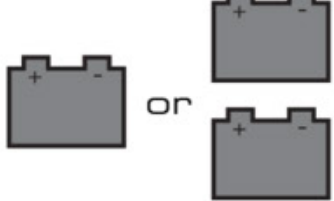

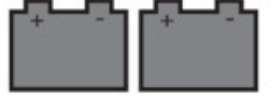

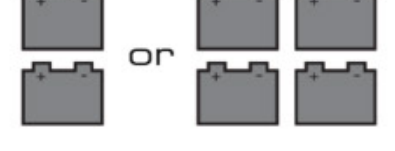

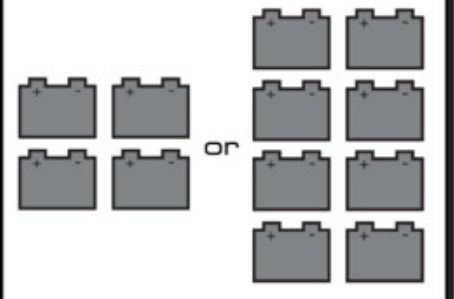
Our roof mount solar kits feature quick connect wiring harnesses removing the need for crimpers and butt connectors when installing, simply mount your components, plug them in and you are good to go.

The leg design of our portable kits add more rigidity and are easier to use than previous leg models, making solar easier at every step.



Sizing Chart

The following chart is designed to help you decide which solar kit is right for your application. With a few simple options, sizing a solar charging system is easier than ever! Choose between a portable solar kit or a roof mounted solar kit to be sure you get the best solution for your needs.

Size of RV		# of Batteries	Recommended Kits for Weekend Getaways		Recommended Kits for Longer Off-Grid Stays	
Small		 1 12-Volt	45-Watt Portable	90 or 115-Watt Roof Mounted Deluxe Kit	90-Watt Portable	115-Watt Roof Mounted Deluxe Kit
		 1-2 12-Volt	90-Watt Portable	115-170-Watt Roof Mounted Deluxe Kit	140-Watt Portable	170-Watt Roof Mounted Deluxe Kit
Medium		 2 12-Volt	140-Watt Portable	170-Watt Roof Mounted Deluxe Kit	180-Watt Portable	170-Watt Roof Mounted Deluxe Kit and 170-Watt Expansion 340 Total Watts
		 2-4 12-Volt	180-Watt Portable	170-Watt Roof Mounted Deluxe Kit and 170-Watt Expansion 340 Total Watts	180 or 230 Watt Portable	170-Watt Roof Mounted Deluxe Kit and 2x 170-Watt Expansions 510 Total Watts
Large		 4-8 6-Volt	2x 230-Watt Portable	170-Watt Roof Mounted Deluxe Kit and 2x 170-Watt Expansions 510 Total Watts		880-Watt Roof Mounted Deluxe Kit and Optional Expansions 880-1,020 Total Watts

Zamp Solar Charge Controller Fault Codes

Models: ZS-10AW, ZS-15AW, ZS-30A, ZS-30AD, ZS-60A

Fault Code Basics

- **b01** - Battery Disconnected
- **b02** - Battery Reverse Connection
- **b03** - Battery Over Voltage (Input voltage to battery terminals exceeds 17.5-V)
- **b04** - Battery Over Temperature (battery core is over 65°C, 149°F)
- **p01** - Solar Panel Reverse Connection
- **p02** - Solar Panel Over Voltage (greater than 26.5-V)
- **OTp** - Controller Over Temperature Protection (controller temperature while charging is greater than 65°C, 149°F)

b01 - Battery Disconnected

- This fault code appears when the Portable solar kit cannot detect a battery bank. Typical reasons for this can be:
 - The portable kit is not attached to the battery bank. Attach portable kit to the RV battery bank with the alligator clips. If the RV is equipped with a Zamp Solar side wall port, plug in the portable kits SAE plug into the side wall port. The controller's LCD display should no longer show a b01 fault code and instead, it will show a voltage reading.
 - The RV's battery bank voltage less than 10-VDC. This fault code also appears when the controller cannot recognize the RV's battery bank if battery bank's voltage has fallen below 10-VDC. If a voltmeter is not available, one method to verify the battery bank is good, is to check if the RV's lights, fans or pumps function. If none of these devices work, the battery could be dead, or it is probably below 10-VDC. The battery bank will need to be fully charged using shore power or running a generator for at least 2 hours.
 - The fuse in the portable kits wiring harness is missing or blown (uncommon), inspect and replace.
 - If the RV's has a solar side wall port, check for a missing or blown fuse, unattached solar port wiring at the battery bank. Inspect and correct the wiring, replace the fuse if required. The controller's LCD display should no longer show a b01 fault code and instead it will show a voltage reading.
- Note: An alternate method is to check if the Zamp Solar portable solar kit is functioning correctly is to attach the kit directly to the vehicles "starter" battery using the alligator clips. The LCD display should no longer show a b01 fault code and instead it will show a voltage reading.
- If none of these steps correct the fault code, contact Zamp Solar Technical Support.

b02 - Battery Reverse Connection

- This fault code appears when controller battery wires have been either reversed at the controller or at the battery bank. Inspect both locations and correct the wiring, after correcting the wiring, the controller's LCD display should no longer show a b02 fault code and instead it will show a voltage reading.
- If this step does not correct the fault code, contact Zamp Solar Technical Support for further assistance

b03 - Battery Over Voltage

- This fault code is uncommon when using a portable kit. However, this fault code could appear if the portable kit has an internal wiring issue. Note: This fault can also occur if the kit is connected to a 24-VDC battery bank system. Ensure the RV is using a 12-VDC battery bank. If the battery bank is indeed a 12-VDC system and the fault code remains, contact Zamp Solar Technical Support for further assistance.

b04 – Battery Over Temperature

- Zamp Solar portable kits do not come standard with a battery temperate sensor. This fault code is uncommon and can only occur if the portable kit's controller is using the optional battery bank temperature sensor. Contact Zamp Solar Technical Support for further assistance.

p01 – Solar Panel Reversed Connection

- This fault code is uncommon but could appear if the portable kit's controller wiring has been reversed. Contact Zamp Solar Technical Support for further assistance.

p02 – Solar Panel Over Voltage (greater than 26.5 volts)

- This fault code is uncommon but could appear if the portable kit has an internal wiring issue. Contact Zamp Solar Technical Support for further assistance.

oTp - Controller Over Temperature Protection

- This fault code is uncommon but could appear if the controller's internal temperature while charging is greater than 149°F (65°C). One example is if the portable kit is in direct contact with an external heat source such as generator exhaust. After cooling the controller for approximately 2 hours, the LCD display should no longer show an oTp fault code. Contact Zamp Solar Technical Support for further assistance if the fault code remains.

Models: ZS-8AW

Solar Power Present-No battery connected

- **Red Fault LED is ON**
- **Blue Charge LED has slow flash**
- **Green Full LED has slow flash**
- This fault code appears when the Portable solar kit cannot detect a battery bank. Typical reasons for this can be:
 - The portable kit is not attached to the battery bank. Attach portable kit to the
 - RV battery bank with the alligator clips. If the RV is equipped with a Zamp Solar side wall port, plug in the portable kits SAE plug into the side wall port. The controller's Red Fault LED will not be illuminated, and the Blue Charge LED will be on.
 - The RV's battery bank voltage less than 10-VDC. This fault code also appears when the controller cannot recognize the RV's battery bank if battery bank's voltage has fallen below 10-VDC. If a voltmeter is not available, one method to verify the battery bank is good, is to check if the RV's lights, fans or pumps function. If none of these devices work, the battery could be dead, or it is probably below 10-VDC. The battery bank will need to be fully charged using shore power or running a generator for at least 2 hours.
 - The fuse in the portable kits wiring harness is missing or blown (uncommon), inspect and replace.
 - If the RV's has a solar side wall port, check for a missing or blown fuse, unattached solar port wiring at the battery bank. Inspect and correct the wiring, replace the fuse if required. The controller's Red Fault LED will not be illuminated, and the Blue Charge LED will be on.
- Note: An alternate method is to check if the Zamp Solar portable solar kit is functioning correctly is to attach the kit directly to the vehicles "starter" battery using the alligator clips. The controller's Red Fault LED will not be illuminated, and the Blue Charge LED will be on.
- If none of these steps correct the fault code, contact Zamp Solar Technical Support.

Battery Is Reversed

- **Red Fault LED is ON**
- **Blue Charge LED has a fast flash**
- **Green Full LED has a fast flash**
- This fault code appears when controller battery wires have been either reversed at the controller or at the battery bank. Inspect both locations and correct the wiring, after correcting the wiring, the controller's Red Fault LED will not be illuminated, and the Blue Charge LED will be on.
- If this step does not correct the fault code, contact Zamp Solar Technical Support for further assistance.

Solar Panel Reversed

- **Red Fault LED is OFF**
- **Blue Charge LED is OFF**
- **Green Full LED is OFF**
- Contact Zamp Solar Technical Support for further assistance.

Solar Panel Weak

- **Red Fault LED has slow flash**
- **Blue Charge LED is OFF**
- **Green Full LED is OFF**
- Contact Zamp Solar Technical Support for further assistance.

At Night - No Charging

- **Red Fault LED is OFF**
- **Blue Charge LED is OFF**
- **Green Full LED is OFF**
- Contact Zamp Solar Technical Support for further assistance