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How to use a solar trickle charger

Whether you're RVing across the country on a weeks-long camping trip where you want to be connected to power all the time without draining your battery, storing a snazzy summer vehicle for the winter and want it to be ready to go when the weather gets warm or just an everyday driver that wants to make your battery last as long as possible, a solar car battery charger kit is an essential piece of your vehicle.A good solar car battery charger kit can go a long way in extending the life of your car battery. It can be compact and easy to bring along with you. They're also powerful and durable. They are made to resist the elements while charging you up with nothing but sunlight.We found kits that can do all of that and more! We have compiled a list of the best options out there.7 Best Solar Car Battery Charger KitsBest Overall: SUNER POWER Solar Car Battery Charger Wattage: 2.4 wattsDimensions: 12.0 in. x 8.0 in. x 0.7 in.The High Points: Medium size, features for durability, low wattage (with option to buy more)The Not-So: Less powerful than others, heavyWe love the carefree flexibility of this option. That is what brought it to the top of our list as best overall. The SUNER POWER Solar Car Battery Charger packs a manageable amount of punch into a tiny package.That doesn't sound exactly promising until you consider what is best for a trickle charger - low wattage. Accidentally overcharging a car battery is a real problem.Choosing a low wattage charger is a great way to manage that risk, without having to buy another add-on. And if you just aren't satisfied with 2.4 watts, SUNER POWER also offers 4.8, 6 and 8 watt options.Combine that with an intuitive design that makes for easy mounting, as well as durability beyond any other option thanks to the rubber lining the edges of the panel, and we have ourselves a winner.What Do Reviewers Say?Reviewers rave about the SUNER Power Solar Car Battery Charger. They note the convenience of the multiple power options. Different reviewers took advantage of the different power options at different price points to find the best fit for them. But whichever the option, they ended up pleased.They also drew special attention to the durability. Some were pleased with the power of the suction cups for mounting which withstood rain. Others mentioned leaving the charger out for weeks in the winter and coming back to find it perfectly functional.Features & ConsiderationsOne thing to keep in mind with this particular solar car battery charger kit is that it is less powerful than some of the other options out there. If you were to want to charge your battery quickly rather than using a trickle charge, this option might not be the best.It is also the heaviest of all of the options on our list. The SUNER POWER solar car battery charger weighs almost three pounds, because of the rubber protectant on the edges.This solar energy car battery charger comes with four slots into which the included suction cups can be slid into order to mount the charger. It might be mounted to a windshield to save space or simply as a way to ensure that it will keep the position in which it was originally placed to maintain the best sun angle possible.It also comes with all the cords, cables and wires you may need to get started. Those include alligator clips and a cable to attach it to the cigarette lighter of a car.See Price on AmazonRunner Up: POWOXI Solar Car Battery Charger Wattage: 7.5 wattsDimensions: 14.5 in. x 9.0 in. x 1.7 in.The High Points: Reasonable size, built for durability, strong charge, intuitive to useThe Not-So: Heavy, suction cups don't work that wellThe POWOXI Solar Car Battery Charger takes second place on our list because of its ease of use, thoughtful design and durability. You can count on it as a trickle charger or backup for your battery. You won't have to worry about it breaking while it's waiting to be used.We love that it's a reasonable size. It maximizes the size of the solar panel, while also not making it so big that it's not easy to transport.Unfortunately, the rubber bumper that makes this product so durable also makes it a bit heavy, though. Over time, that prevents it from staying attached when hanging vertically by the suction cups.What Do Reviewers Say?Reviewers heralded the POWOXI Solar Car Battery Charger as their top choice as a battery maintainer for use during the winter months when they weren't using a vehicle such as an RV or boat. Most noted how durable it is. That is because of a waterproof design plus rubber bumpers to protect the solar panel kit. That makes it resistant to the elements.The power of this solar car battery charger kit is another thing that reviewers love about it. There are two options - a 3.3 watt and a 7.5 watt option. Those that went with the 7.5 watt option liked it better. They suggested that, for the small price difference (we're talking really small), it was much more worth it to get the more powerful option.Features & ConsiderationsThe POWOXI Solar Car Battery Charger is a solid car battery charger that will get the job done and hold up to whatever harsh weather you throw at it. It works as a trickle charger. That means that it is meant for maintaining charge over time.Despite being 7.5 watts, which is not weak, it still is not meant to charge your battery up from zero quickly. It works best in bright sunlight when trying to maintain charge. It also does not come with a solar charge controller. So being careful to monitor your charge is important.It is highly portable given its medium size and durable design. However, it is somewhat heavy, weighing more than 2 pounds. That can be a pain in transportation.The weight also affects the ability to hang it. That is because, with time, the suction cups that come in the kit that allow you to hang the solar panel do deteriorate some.See Price on AmazonBest Mid-range Option: Sunway Solar Car Battery Charger Wattage: 3 wattsDimensions: 13.9 in. x 5 in. x 0.5 in.The High Points: Unique design, medium power, reasonable priceThe Not-So: Hanging mechanism is weakFor an option that hits all the necessities, but comes with a more affordable price tag, we present the Sunway Solar Car Battery Charger. It has all the features we love. Those include a plaster bumper around the solar panel, a built-in hanging mechanism and a low enough output to not need to be worrying about overcharging, while still trickle charging effectively.The shape and size of the Sunway Solar Car Battery is unique. Instead of taking on a more traditional wide rectangular shape, this solar panel is a longer rectangle. That makes it a more efficient shape place on a dashboard, blocking less of the windshield.In terms of weight, this solar car battery charger kit is relatively light. It is in the middle in comparison to other solar chargers in terms of weight, coming in at less than a pound and a half.Despite being lightweight, hanging it might not be as easy as it seems. That is because this option just comes with two connection points for the included suction cups. So compared to other models, it only has half the grip.What Do Reviewers Say?Like many reviewers of other products, many people who tried and loved the Sunway Solar Car Battery Charger tried it on a variety of vehicles. Those included tractors and 4x4s as well as the more traditional option of a car. They found that the unique shape is helpful for mounting it inside of a vehicle without taking up too much space.Reviewers also noted that it held up extremely well to weather. It continued to function as expected even after sitting outside in a rainstorm. This is one of the only solar car battery charger kits that is actually highly waterproof. (It might not take a true submersion, but rain shouldn't be an issue.)Features & ConsiderationsThis solar car battery charger kit includes all the basics you need to get started. That includes everything from alligator clips to a connection to your car's cigarette lighter.It goes beyond the basics as well, mounting the solar panel in a plastic frame that help prevent warping and featuring a long cord that can actually be threaded out of the vehicle even through closed doors because of the cord's flexible rubber stripping.Despite all of the wonderful benefits of this option, it does only have two connection points for hanging which can make it difficult to modify this piece using the provided hanging mechanism (suction cups). That said, this is an excellent mid-range option, as the hanging mechanism is your biggest sacrifice for a more accessibly priced product that can still perform at the same level as the more expensive ones.See Price on AmazonA Budget Option: NOCO Solar Battery Charger Wattage: 2.5 wattsDimensions: 9.2 in. x 9.2 in. x 0.6 in.The High Points: Small size, very affordableThe Not-So: Not very durableThe NOCO Solar Battery Charger packs a lot of punch for its small size, which is why it takes the cake for our favorite budget option. Coming in at around 2/3 of the price of other options, this product is a deal that doesn't sacrifice much for the price cut.At only nine inches by nine inches, it's quite small, which makes it easy to move around, and even easier to install and forget about. Since it's only 2.5 watts, it's perfectly okay to leave the NOCO Solar Battery Charger plugged in without a second thought to leave it maintaining your battery 24/7.What Do Reviewers Say?Reviewers were pleased with the construction quality of the NOCO Solar Battery Charger, especially at such a low price point. It seems to withstand basic weather well, but it's mounted to a piece of plastic, which some found that over the course of years of use in the sun will warp and can eventually damage the solar panel.In addition to the construction, reviewers were also happy with the reliability of the NOCO Solar Battery Charger. Although NOCO offers a 5 watt option, most found that for trickle maintenance charge, the cheapest 2.5 watt option does the trick, without leaving anything to be desired.Features & ConsiderationsCompact and effective are the key words for the NOCO Solar Battery Charger, and it certainly lives up to them. For a simple 2.5 watt solar charger, it can maintain batteries of many different sizes and will do so well.One thing to keep in mind is that because of the small size, it is extra important to make sure that the panel is getting lots of sun, which can prove a little difficult because the cord that comes with the panel is quite short. Maneuvering it into the best place may take some time and effort, but once you've found a good spot for it, the NOCO Solar Battery Charger will get the job done.See Price on AmazonMr. Reliable: ALLPOWERS Solar Battery Maintainer Wattage: 18 wattsDimensions: 16.5 in. x 11.0 in. x 0.1 in.The High Points: Reliable, easy to use, simple, lightThe Not-So: Unprofessional appearance, warps easilyThe Best Advice that we can give you about the ALL POWERS Solar Battery Maintainer is "Don't judge a book by its cover." This solar car battery charger kit may not look impressive, but it what it can do is Quite large, but not too heavy, the ALLPOWERS Solar Battery Maintainer is a breeze to set up and use. It comes with all the pieces you need to connect it to your battery, and although it does come with 4 suction cups to mount it, the panel also has 4 slots, one on each corner, in which a screw could easily be inserted to mount it, which may work even better than the provided mechanism.We call this panel Mr. Reliable because it is a solar car battery charger kit that can be relied on. Its output is a not-so-humble 18 watts, and because of its large surface area, just getting it out in the sun will get it working in no time.What Do Reviewers Say?Reviewers consistently say that the ALLPOWERS Solar Battery Maintainer performs "as expected." We expect it to perform well, so that's a good sign, and what they have to say backs that up.They tended to be pleased with its speed and output, noting the thoughtful inclusion of the blocking diode to prevent reverse discharge as well as a sealing silicone sealant. The only negative aspect that appeared in a few different experiences was the lack of internal mounting of this panel, which makes it subject to warping easily.Features & ConsiderationsUnlike some of the other choices out there, the ALLPOWERS Solar Battery Maintainer does not come with a plastic or rubber mount/lining to support it. It's freestanding, which can be an upside or a downside, depending on where you're planning on placing it.If you'll be mounting it onto a surface, it will lay flat easily and can very easily be installed to add an unimposing bonus to your vehicle. If you're planning on using the solar car battery charger on a more temporary basis then it may be wise to mount it to something more stable to prevent a situation in which the panel ends up bending and breaking either due to heat or turbulence.It also has a water/dust resistance rating of IP65 which means that it is completely dustproof and that it can withstand a splash of water. It's not waterproof, but some drops of rain won't do it any harm.See Price on AmazonThe Powerful Choice: TCXW Lightweight Solar Panel Kit for Car Wattage: 30 wattsDimensions: 20.5 in. x 13.0 in.The High Points: Powerful, lightweightThe Not-So: Large, difficult to transportIf power is your priority, then the TCXW Lightweight Solar Panel Kit for Car is your best choice. It's almost twice as powerful as the next most powerful option on our list and TCXW offers options that are even more powerful, ranging from 60 to 100 watts. These solar panels really pack a punch.Another thing we love about the TCXW Lightweight Solar Panel Kit for Car is how light it is - it is the second lightest option on our list, weighing just over 1 pound, which makes it super easy to pick up and position. You can lift the solar panel onto the roof of your RV with just one hand or use that lightness to shift it around the extra inch to get the best sunlight possible.Unfortunately for how light it is, this solar car battery charger is quite large in terms of surface area, the longest edge almost spanning 2 feet, and it's quite fragile, which can make transporting it a little difficult. We also recommend picking up a charge controller to use with this kit because of how powerful it is, to prevent overcharging your battery.What Do Reviewers Say?Almost every reviewer that tried this product was blown away by how quickly it can charge. Many solar panels are not very powerful, and therefore will often take hours, if not days, to charge up batteries. This model is capable of doing the same in just a few hours.Reviewers also note that after being outside in the sun for a particularly long period of time on a not-flat surface, the panel is likely to warp. This can easily be fixed by then laying it onto a flat surface, but with time the panel may deteriorate because of this constant bending. Another solution is to mount it to a flat surface in order to make sure that it is consistently flat.Features & ConsiderationsThe large surface area of the panel makes it great for getting the largest amount of sun, and therefore power, possible. There is a downside, though, and that is that being so large means that it is not easy to transport.It's also important to remember that with a solar panel outputting so much power to a battery that can only handle so much, having a charge controller is invaluable for helping protect your battery. This solar car battery charger kit doesn't include one, and it is already on the expensive side, so getting it up and running will be costly.See Price on AmazonFor Those That Like To Experiment: SUAOKI Solar Car Battery Charger Wattage: 2.5 wattsDimensions: 9.2 in. x 9.2 in. x 0.6 in.The High Points: Super light, lots of options of where to mount and use because of simplicity and powerThe Not-So: May warp with sun, largeThe SUAOKI Solar Car Battery Charger is unique in this list because of how easy it is to make it work in a variety of situations. That is how it garnered the title "For those that like to experiment." Although it just comes with the basis, it is a good choice for those who want to trick out their solar panel to work for them in a variety of environments or for a variety of uses beyond trickle charging their car battery.Since the SUAOKI Solar Car Battery Charger can emit 18 watts, it is powerful enough to charge many different devices and batteries, which makes it flexible in terms of use. It is also large enough to easily receive enough sun to get it working consistently at that capacity.All of that said, this solar car battery charger kit is no-nonsense and comes with next to no bells and whistles, so it might need a little extra to get it up and going. For example, although it does come with suction cups to help mounting, it is subject to warping in the sun because of the heat, so it is probably a better idea to mount it on something flat and solid to prevent this issue.What Do Reviewers Say?Reviewers were creative in their uses of the SUAOKI Solar Car Battery Charger. They often went beyond the car battery charger part and put it to use as a RV battery charger, a boat battery charger and even a motorcycle battery charger, reporting that in all of these different scenarios, it still worked quite well.They also mentioned having added everything to the panel from a longer extension cord to a wood frame, all to make it as easy and efficient to use as possible. Whatever you decide to do with yours, this is a flexible enough product to handle it.Features & ConsiderationsIn addition to the included suction cups to potentially mount your SUAOKI Solar Car Battery Charger, it also comes with 4 eyelets in each of the corners. These are small enough that if the suction cups don't work for mounting, but you also don't plan to significantly alter the panel, 4 small screws can be inserted to mount it. This is also the lightest solar panel on this list, weighing less than one pound. That means that despite its large size, its weight will not be a limiting factor when mounting it.See Price on AmazonBack to TopThe Complete Solar Car Battery Charger Kits Buyer's GuideWhat Makes a Good Solar Car Battery Charger Kit for YouAlthough many solar car battery charger kits have a lot in common, there are also some things that differentiate them. Paying attention to the small features that vary in quality and usage is just as important to decide which is best for you as is considering the aesthetics and practical usage of the solar panel.Where are you taking the solar car battery charger kit?Car camping, on a wilderness road trip, on a boat, as back-up battery starter for emergencies, with your RV... the options are endless.And that also means that your combinations of needs could be endless. But we can divide the needs into: needs to be used outside or probably will be used inside of the vehicle unless sunny.If you're planning to use the car battery charger kit outside, you're probably going to want it to be waterproof and dustproof, as well as come with some other protections to make sure it doesn't just fall apart.You also should consider if it will be outside in the sun for long periods of time mounted to something or not. Some of the solar panels may warp if they spent a lot of time against a warm surface (as well as heating up themselves), so choosing one that will not warp if you do not mount it should be a priority.How much space do you have?If your answer is "A little"-A small amount of space means that you're going to need a small charger, but you don't want it to be so small that it doesn't do any good.Chargers that efficient are your best friend, especially if they combine both efficiency in design and efficiency in functionality.By efficiency in design, we mean chargers that have some sort of extra feature that makes them fit better, like suction cups for mounting the charger to your windshield to maximize space. Efficiency in functionality would be the most powerful solar panels in the smallest amount of space.If your answer is "A lot"-If you've got the space, you might as well take advantage of it, and choose the solar car battery charger that is going to give you the most power.There are a few options that are thin and wide, which allows them to maximize the sun that they receive and therefore are more powerful. If you have the space for it, this is a great option.If you're somewhere in the middle:For those who can manage to marry efficiency in design and functionality, while taking advantage of the little bit of extra space you have, then you can go for the option that best combines the two, but keep in mind, you might pay extra for it.As far as size goes, here is a little summary of the products on our list, taking into account both dimensions and weight.What other features might be useful?Some of the solar bar battery charger kits offer a few extras that make them stand apart from the rest. Those features are:WaterproofDustproofCharge controllersOther connection optionsMore color optionsRubber-lined edges to resist bumps and fallsThe different solar car battery charger kits on our list offer a few different combinations of these features and sizes to make sure that there is a choice that best fits your needs.Back to TopSelection Criteria: How We Ranked the Best Solar Car Battery Charger KitsWhen looking at different solar car battery charger kits, we found a variety of kinds of kits. Each kit included different things and the solar panels and hook-ups themselves work in different ways.Some are user-friendly and include everything you need with little-to-no maintenance, while others are more of a start to make a tricked-out battery charger. There are designs that are large and meant to be mounted permanently or semi-permanently, while others are small and portable. Some prioritize high power, and some of the other varieties utilize trickle-charge instead.So, as you can see, there is no one-size-fits all solar car battery charger kit. There are a few factors, though, that we consider important in every kit, such as the following:Power (measured in watts)Size (including both weight and dimensions)DurabilityWays to mountEase of useThe BasicsSome of these things are more self-explanatory - we always opt to recommend products that are easy to use and built to last. In considering those factors, we look for signs of design that are carried out with the customer clearly in mind.For example, we favor solar car battery charger kits that include all the items that customers need to get charging right away, without needing to buy any extra pieces that drive up the complexity or cost of the product. In this case, that means kits that include both a connection to a cigarette lighter as well as alligator clips, and kits that don't require a charge controller.PowerWhen talking about power, we have watts in mind. Here is a breakdown of the products on our list in terms of their wattage.Although there are merits to both higher and lower wattage, in this case, for the sake of simplicity and what is necessary for a trickle charger, we actually tended to generally favor lower wattage kits, while reserving higher wattage ones for special situations.Other FactorsSome of the other factors that we considered were size (favoring smaller, more portable panels when possible) and ways to mount (if there is an included system in the kit or not). In general, any kit on this list will get the job done in all of these categories; it is just a matter of which is the best fit for your situation.Back to TopFrequently Asked Questions (FAQ)What is reverse discharge protection and how does it work? Is it necessary?Reverse discharge protection is key when using a solar charger of any size, especially if you plan on leaving your device (whether that is a car or a cell phone) connected to the charger. It ensures that if for some reason the solar panel isn't active charge, for example, because the day has turned cloudy or the sun has gone down, that the power that the panel has converted for your device doesn't leak back out (discharge).The way that the charger can do this is by using a blocking diode. Basically, current will always flow from high voltage to low voltage. The blocking diode is a small device that prevents that current from flowing back to the solar panel.Although many more advanced solar panels have charge controllers, for a relatively simple device like a car battery charger, a blocking diode is enough to prevent reverse discharge.What is overcharge protection and how does it work? Is it necessary?What a blocking diode does not do is that a charge controller will do is prevent overcharge. Overcharge is when a battery receives too much voltage all at once, which can damage the battery. Charge controllers help to regulate how much voltage is being put out at one time to help prevent that.A good rule of thumb is that trickle charge panels do not need a charge controller. These panels (which are the majority of the panels on our list) usually give out fewer than 2 watts each for every 50 battery amp hours. In cases where the output is more than that, then you'll need to be careful to keep an eye on your solar panel to make sure it does not overcharge your battery.How do I connect the panel to my car?The most convenient way to connect to your car is via the 12 volt auxiliary port (commonly known as the cigarette lighter). Most of the solar car battery charger kits include a plug which is compatible with the port, which makes plug-in very easy, although it is important that in this case, the ignition needs to be on in some cars.The other option is to use the alligator clips to attach to your car's battery directly. Most of the kits also include alligator clips. This option works just as well and whichever option you end up choosing should just be whichever is more convenient for you.What is trickle charge and why is it useful?Most of the chargers on our list work as trickle chargers, rather than charging up your battery from zero. There are a few reasons why they are like this.The first is that a trickle charge is a maintenance measure; that is your goal, to maintain your battery, rather than restart it. This is because it takes a lot more power to restart a car battery, and in general, most of us prefer to not reach that point. It also helps to ensure that you are maintaining a consistent charge, neither overcharging it nor allowing your battery to completely run out.It is also important to note that nearly all solar chargers work in this way - they work best charging slowly over time. Generally, a solar charger, unless integrated with its own battery, won't convert enough power all at once to jump start a battery. What it is really good for, though, is trickle charging small amounts as you consistently use small amounts of a battery.Thus, using a solar car battery charger is a preventative measure. Its trickle charge prevents you from running out of battery when you need it.Can I use this solar panel with any other devices?Yes. Most of these solar car battery charger kits are actually marketed to be used with a number of small vehicles, including cars, motorcycles, small boats, RVs, snowmobiles, etc.It is important to check the output of each specific one to ensure compatibility as well as the specifications of the individual motor to which you will be attaching the solar panel. But in general, the majority of solar car battery charger kits listed here will work with other small vehicles.Back to Top

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