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i just installed a 100/50 victron controller and a 370 watt solor panel i use 4 12 volt agm 190 amp hour batterys do i just set the controller for agm batterys and use the settings it has ? Is it a blue solar 100/50 mppt? It's the smart solar 100/50 See if your battery manufacturer has recommended charge voltage settings because these can vary from.manufacturer to manufacturer. On the SmartSolar use the VictronConnect app to program the controller. You can choose the closest preset, or turn.on expert mode and set absorption and float independently. If you have no data from the manufacturer conservative settings are 13.6V float and 14.4V absorption. This site is now in read-only archive mode. Please move all discussion, and create a new account at the new Victron Community site. To optimize the performance of your solar power system and safeguard the battery bank, it's crucial to configure the charge controller with the correct settings. While the specific steps vary across different controllers, understanding the fundamental parameters is the key to optimizing any solar charge controller. This article reviews the core concepts you need to know and walks through general setup steps. We also provide model-specific instructions for popular controllers. By the end, you'll know to configure your controller like a pro, maximizing the effectiveness and longevity of your solar energy system. Let's start by understanding the key parameters related to solar charge controllers. This is the first step towards optimizing your solar charge controller settings. This knowledge will empower you to make informed decisions, ultimately maximizing the effectiveness and efficiency of your solar system. Think of the system voltage as the operating energy level of your solar power system. In most cases, this is the same as your battery voltage. Common system voltage levels are 12V, 24V, or 48V. This is the peak output current your solar panels or array can produce. Essentially, it's the maximum power your system can provide during the most effective solar energy periods. This is the highest current level that your solar charge controller can safely manage. This capacity typically dictates the rating of your solar charge controller and ranges from 10A up to 100A. Knowing how to configure the solar charger controller settings according to your specific solar battery type for an effective solar energy system can significantly enhance the charging efficiency. Different solar batteries possess unique characteristics, so we must discuss the optimum settings for the most commonly used types: AGM (Absorbent Glass Mat), LiFePO4 (Lithium Iron Phosphate), and lead-acid batteries. Solar Charge Controller Settings for AGM Batteries AGM batteries stand apart due to their fiber-boron-silicate glass separator replacing the traditional liquid electrolyte, resulting in a spill-proof design. This makes them a versatile choice, compatible with an array of vehicles, and even suitable for jump-starting a vehicle running low on power, given the suitable solar charge controller. To get the best out of your AGM battery, it's essential to adjust your solar charge controller settings following the manufacturer's recommendations. The controller settings will determine the maximum output voltage and current, designed to optimize charging efficiency. Solar Controller Settings for LiFePO4 Lithium Batteries LiFePO4 batteries come with their unique requirements. Unlike other battery types, they do not need voltage or temperature compensation. To get the best performance from your LiFePO4 battery, it's recommended to use an MPPT solar charge controller with a "user" or "custom configuration" mode. These controllers are designed to regulate voltage from a high panel to a low voltage, which is obviously ideal for heavy-duty applications. Do not forget to install a charge controller with low-voltage protection to safeguard your battery. Solar Controller Settings for Lead Acid Batteries Regarding lead-acid batteries, most solar charge controllers are pre-set with parameters suitable for this traditional and widely-used battery type. In many cases, it's simply a matter of plug-and-play, but always check the manufacturer's instructions for any specific recommendations or settings. Optimum Charging Parameters for Different Battery Types Here's a summary of charge controller settings for each battery type considering a 12V system voltage: The table above shows many new technical parameters related to battery charging and dischLet'sg. Let's understand these next. First things first, identify the type of your battery. This could be a Sealed Battery, Gel Battery, Open Lead Acid Battery, Lithium Battery, or Custom Battery. This parameter tells the controller when to cut off the power to the battery, preventing any damage from overcharging. Each battery type has a unique voltage level for disconnecting the controller. The Equalization Voltage setting instructs the controller to periodically charge the battery to a specific voltage, ensuring all cells are balanced. Again, each type of battery has a specific voltage for this. The Boost Voltage is the voltage level to which the controller charges your battery during the bulk chargingIt'sge. It's another parameter that must be adjusted based on your battery type. The Float Charge Voltage is what the controller uses to maintain the battery once it is fully charged. This prevents self-discharge and keeps your battery ready for use. Each battery type has its own ideal Float Charge Voltage. After the battery is discharged following the float stage, it must return to work. The Boost Recovery Voltage tells the controller when to kick back into the bulk charging stage. Each type of battery has its own unique Boost Recovery Voltage. How long should the equalization process take? The Maximum Equalization Duration sets the length of time for the equalization process. This duration depends on the type of battery. The Equalization Charging Interval sets how often the equalization process is carried out. The frequency of this process varies depending on the battery type. Finally, the Equilibrium Charging Interval tells the controller how often to carry out the equilibrium charging process. This also depends on the type of battery. Steps for Solar Charge Controller Settings Getting your solar charge controller settings right is vital for your solar power system's optimal performance and longevity. The settings cater to the specific needs of your battery and system setup. Here's a general outline of how to set up your solar charge controller: Begin with Proper Wiring: Kickstart your setup process by connecting the charge controller to your battery bank and solar panels. Make sure to folmanufacturer'scturer's instructions to wire everything correctly. When the controller detects power, its screen will illuminate, signaling you're ready for the next step. Navigate to the Settings Menu: Access the controller's settings menu by pressing and holding the menu button for a few seconds or using a mobile app if your controller has one. This will open up various settings options to fine-tune your charge controller. Display Charge Current: Check out the charge current from the photovoltaic (PV) system to the battery. It's typically displayed on the settings menu, giving you an insight into the power flowing into your battery. Select Battery Type: Next, go to the Battery Type Selection setting. You can specify your type here, as different batteries require different charge parameters. Let the Controller Detect Battery Voltage: Your charge controller should automatically recognize the voltage of your battery. This automatic detection feature takes the guesswork out of setting your charge controller. Adjust Charging Voltages and Cutoff Values: Now comes the part where you personalize your controller settings. Set the absorption charge voltage, low voltage cutoff value, and float charge voltage according to your battery's user manual. Adjusting these settings helps prevent battery damage and promotes efficient charging. Start Charging: Your solar charge controller is ready to go once all these settings are adjusted! It will commence the charging process, supplying your battery with power from your solar panels. While the steps above cover all major aspects of solar charge controller settings, each model has a slightly different way of carrying out the setting. Next, let's see how to set up four popular charge controller models. Renogy Rego MPPT Solar Charge Controller Settings: Step-by-step Guide The Renogy MPPT Solar Charge Controller is an advanced solar charge controller that uses Maximum Power Point Tracking (MPPT) technology to maximize energy harvest from solar panels to charge batteries. Following are the steps to set up the controller settings: Step 1: Selecting the Battery Type Identify the type of your battery. It could be an AGM battery, gel battery, flooded lead acid battery, Lithium battery, or a type that requires custom settings (User). Locate the knob with 5 gears on your Renogy MPPT solar charge controller. Turn the knob to the setting that corresponds to your battery type. For example, turn the knob to 'AGM' if you have an AGM battery. If you have a Lithium battery, turn the knob to 'LI'. If your battery type requires custom settings, turn the 'nob' to 'USER'. This will allow you to enter the user mode and set the parameters yourself. Step 2: Using Default Preset Values If you've selected a specific battery type (not 'USER'), the controller will automatically use the default preset values for that battery type. You don't need to do anything else. The controller will manage the charging parameters based on the selected battery type. Step 3: Setting the Controller in User Mode If you've selected 'USER' because your battery type requires custom settings, you must use the DC Home app to program the battery parameters. Here's how to do it: Make sure Bluetooth is turned on on your mobile device. Download the DC Home app. You can find the download link by scanning the QR Code on the last page of the user manual. Open the DC Home app 'n' tap '+' to search for new devices. Tap 'Confirm' to add the newly found device (your solar charge controller) to the device list. Tap the charge controller area to enter the device information interface. Tap '•••' in the upper right corner, then tap 'Settings' to enter the mode selection interface. In this interface, you can customize multiple parameters of the battery. When you've modified the parameters, 'Setting Success' will appear on the interface, indicating that the parameter setting is completed. Before modifying battery parameters in user mode, check the settings table above and consult the battery manufacturer to ensure that modification is allowed. Incorrect parameter settings can damage the device and void the warranty. Renogy Rover MPPT Solar Charge Controller Settings: Step-by-step Guide The Renogy Rover charge controller can be set up in two ways: Connect the solar panel, battery, and load to the charge controller. The controller will automatically detect the system voltage. On the main screen, hold the Right arrow button to enter settings. Press the Right arrow button again until the battery type screen appears. Use the Up/Down buttons to select the following battery type: Sealed lead acid Gel Flooded User Press the enter button to save the selection. Follow steps 1-4 above to enter the settings menu. Press the right arrow button to cycle through the settings until reaching the desired voltage screen: Equalizing voltage Boost voltage Float voltage Over-discharge return voltage Over-discharge voltage Use the Up/Down buttons to set the custom voltage. Press and hold the Left button to save the setting. Repeat for other parameters. Press the Left arrow button to exit programming. The controller will charge the batteries according to the selected type or custom parameters. The load terminal can also be programmed for different control modes. Victron MMPT Solar Charge Controller Settings: Step-by-step Guide Victron MPPT charge controllers are excellent for charging both lithium and lead-acid batteries. These controllers offer versatility by allowing manual settings for charging various battery chemistries. Let's show you how to program Victron MPPT charger controller settings: Step 1: Download the VictronConnect App Download the VictronConnect App from the App Store or Google Play Store and create an account. Step 2: Access the Device List In the "Device List", look for the charge controller. It should say "SmartSolar". Click on the device image. Step 3: Enter the PIN Code A Bluetooth pop-up window should appear, prompting you to enter the pin code. The default pin is 000000 (six zeros with no spaces in between). Step 4: Update the Firmware If a firmware update is available, click the 'Update' button below. Refrain from touching your phone while the update is in progress. Step 5: Access the Battery Settings After reaching the main screen, click on the gear symbol in the top right corner, followed by the battery menu. Step 6: Select Battery Voltage After opening the battery setting page, select the appropriate battery voltage (12, 24, or 48V). Step 7: Choose the Battery Preset Select the appropriate battery type or chemistry from the battery preset menu. Custom Settings If you want to manually set up the charging settings, refer to the table below. But please consult the battery manufacturer before modifying battery parameters manually. Incorrect parameter settings can damage the device and void the warranty. AllPowers PWM Solar Charge Controller Settings: Step-by-step Guide The AllPowers PWM Solar Charge Controller is an advanced solar energy management tool that offers customizable settings for various battery types. Follow these steps to set up the controller settings: Identify your battery type. The controller automatically recognizes lead-acid batteries, but for other batteries, you must select the type manually. Access the battery type setting on the controller by pressing the menu button until you reach the battery type setting. Following are the settings you should use: B01 for lead-acid 12V B02 for lithium-ion 3s (3×3.7V=11.1V) B03 for LiFePO4 4s (4×3.2V=12.8V) Step 2: Using Default Preset Values If you've selected a specific battery type, the controller will automatically use the default preset values for that battery type. The controller will then manage the charging parameters based on the selected battery type. Step 3: Setting the Controller in User Mode If your battery type requires custom settings, you will need to enter the user mode and set the parameters manually: Press and hold the Menu button until the value you want to change begins to flash. Use the UP/DOWN buttons to adjust the value. You can adjust the following parameters: Charging voltage value Low voltage recovery value Low voltage disconnect value Load working mode Press and hold the Menu button again to save the changes and exit the settings. 5.2. All settings explainedThis chapter lists all solar charger settings that are user-configurable and also explains how to update firmware of the solar charger.Battery voltageThe battery voltage is automatically detected at the very first power-up of the solar charger and the battery voltage is set accordingly. Further automatic detection is disabled. To make sure that a stable measurement is used, the charger first waits 10 seconds, and thereafter takes an averaged measurement. Note that the solar charger will remain off during this time.In case the solar charger does not measure a battery voltage, it will default to 12V and store that. This will happen if the solar charger is powered via its PV terminals, while not connected to a battery.After automatic detection has taken place, the battery voltage can be changed and set to 12 or 24V , if so required .Tip:If the firmware of the solar charger needs to be updated, while keeping the automatic voltage detection active, for example before shipping the unit to an end-user, do the following:Update the firmware.Once the firmware update is complete, go to the settings page in the VictronConnect app.On the settings page, click on the three vertical dots in the upper right corner and select "Reset to defaults" from the drop-down menu.Un-power the solar charger within 10 seconds.The next time that the unit is powered up, it will perform the initial automatic voltage detection.Max charge currentThis setting sets the maximum battery charge current. It is by default set to the maximum solar charge current.Use this setting to reduce the charge current, for example, when a smaller battery bank is used that requires a lower charge current.Charger enabledThis setting enables or disables the battery charger. It is by default set to "enabled".This setting can be used when work needs to be carried out on the installation. When this setting is disabled, the batteries will not be charged.Battery presetThis setting sets the battery charge algorithm. It is by default set to "rotary switch".A selection can be made between:The rotary switch position.Pre-defined factory battery presets.User-defined battery presets.Create, modify or delete a user-defined preset.This setting uses factory pre-defined presets for a large variety of battery types. These pre-defined charge algorithms are suitable for almost all installations.It is possible to also create user-defined battery presets. The chapter Customize battery charge algorithm explains how to do this. These user-defined presets are stored in the VictronConnect app library. This is helpful in case multiple solar chargers need to be configured, eliminating the need to define the entire charge algorithm each time a new solar charger is configured.Expert modeThis setting enables or disables expert mode. It is by default set to "disabled".The default charge algorithms work well for almost all installations. Only enable expert settings if your equipment has special requirements.When this setting is enabled the following parameters can be configured:Charger voltages: bulk, absorption and float.Bulk: re-bulk voltage offset.Absorption: duration, time and tail current.Equalization: current, interval, stop mode and duration.Temperature voltage compensation.Low temperature cut off.For the meaning of these parameters see chapter Battery charge algorithm settings.EqualizationEqualization can cause damage to the battery if the battery is not suitable for an equalization charge. Always check with the battery manufacturer prior to enabling equalization.This setting can be used to disable or enable automatic equalization. When enabled, the number of days can be selected when equalization should repeat.A manual equalization can be initiated by pressing the "START NOW" button. Use the manual equalize option only during absorption and float charge stages, and when there is sufficient sunlight. The current and voltage limits are identical to the automatic equalize function. The manual equalization stage lasts 1 hour and can be stopped at any time by the Stop Equalize.The equalization setting might not be active, this can be the case if the battery preset does not support an equalization charge which is the case with lithium batteries.Customize battery charge algorithmThis chapter explains how to modify a battery charge algorithm or to create, modify and delete user defined battery presets. See the Battery charge algorithm settings chapter for the meaning of all charge algorithm parameters.Only experienced users should configure or edit user defined battery charge algorithms. A wrongly defined battery charge algorithm can lead to battery damage or create unsafe situations.To Modify a basic battery charge algorithm:Select a preset battery type that is the best match to your battery type.Change one of the basic charge parameters that are listed on the settings screen.Configure the required parameters.The battery preset is now set to "user defined".To Modify an expert battery charge algorithmEnable "Expert" mode.The basic and additional charge parameters are now listed on the screen.Configure the required parameters.The battery preset is now set to "user defined".To create and save a custom battery type:Select a preset battery type that is the best match to your battery type.Change the charge parameters so they match your battery. This can be done either in normal mode or in expert mode.The battery preset is now set to "user defined".Select in the "Battery preset" menu "Create preset".Give the preset battery a name.To load a custom battery type:Select in the "Battery preset" menu "Select preset".The menu lists all factory preset and custom battery types that were previously added (if any).Select the battery type of your choice.To modify (or delete) a custom battery type:Select in the "Battery preset" menu "Edit presets"Navigate to the battery you want to modify. It is not possible to modify a factory preset, only custom types can be modified (or deleted).Modify the charge parameters.To save the settings press the "SAVE CHANGES" button at the bottom of the page.To delete the battery, press the "REMOVE PRESET" button.Battery charge algorithm settingsThis chapter explains all parameters that are used in "Expert" mode and the settings that are used when programming a custom battery type via the battery preset menu.Absorption voltage This setting sets the absorption voltage.Adaptive absorption timeThis setting enables or disables the adaptive absorption time.When disabled: The length of the absorption stage is the same each day, the length is determined by the "Maximum absorption time" setting, provided there is enough solar power.Be aware that this option can potentially result in overcharging your batteries, especially for lead batteries and if only shallow daily discharges take place. Check with the battery manufacturer for the recommended maximum absorption time.The only condition that can end the absorption time before the maximum time has been reached, is the "tail current" setting. If the absorption time always needs to be the same length, then disable the "Tail current" setting. See more information on the tail current setting further down in this chapter.When enabled: The length of the absorption stage is different each day, it adapts itself to the state of charge of the battery in the morning at the beginning of the charge cycle.The maximum "adaptive" absorption time for the day is determined by the battery voltage as measured just before the solar charger begins operation each morning.Maximum absorption time This setting sets the absorption time limit. This setting is only available when programming a custom charge profile.Enter the maximum time in hours and minutes (hh:mm) the solar charger is allowed to spend in the absorption stage. The maximum time that can be set is 12 hours and 59 minutes.Float voltageThis setting sets the float voltage.Re-bulk voltage offsetThis setting sets the re-bulk voltage offset. This offset voltage is used to determine when a charge stage stops and the bulk stage starts again, i.e. the charge cycle resets and starts at the first charge stage again.The re-bulk voltage is calculated by adding the re-bulk voltage offset to the lowest voltage setting (normally this is the float stage).An example: If the re-bulk offset is set at 0.1V and the float voltage at 13.8V, the charge cycle will restart once the battery voltage drops below 13.7V (13.8 minus 0.1) for one minute.Equalization voltage This setting set the equalization voltage.Equalization current percentageThis setting sets the percentage of the "maximum charge current" setting that will be used to calculate the equalization charge current.For example: If the "maximum charge current" setting is set at 10A and the "Equalization current percentage" setting is set to 10%, the Equalization current will be 1A (10% of 10A).Automatic equalizationThis setting sets the repeat interval when the equalization stage should take place. This can be set between 1 and 250 days. Setting to 1 means a daily equalization, 2 means every other day and so on.An equalization stage is typically used to balance the cells and also to prevent stratification of the electrolyte in flooded lead-acid batteries. If equalization is needed or not depends on the type of battery if (automatic) equalization is needed and under what conditions. Check with the battery supplier to find out if equalization is needed for the battery.During the equalization stage, the charge voltage increases up to the set "Equalization voltage". This is maintained as long as the charge current stays below the "equalization current percentage" setting of the "Maximum current" setting.Duration of the Automatic equalization cycle:For all VRLA battery presets and for some flooded battery presets, the automatic equalization stage ends when the voltage limit (maxV) has been reached.For the lithium battery preset, equalization is not available.When an automatic equalization stage has not been completed within one day, it will not resume the next day. The next equalization surge will take place according to the interval as set in the "Auto Equalization" setting.Equalisation stop modeThis setting determines when the equalisation stage should end:Automatic: Equalization stops if the battery voltage has reached the equalisation voltage.Fixed time: Equalization stops when the time has reached the time as set in the "Maximum equalization duration" setting.Maximum equalization durationThis setting sets the maximum time that the equalization stage will last.Manual equalizationUse this to perform a "once-off" equalization. Once the "start now" button is pressed, a one-hour equalization cycle will be performed, alternatively, the equalization stage can be stopped manually.Tail currentThis setting sets the current threshold to end the absorption stage before the maximum absorption time has been reached. If the charge current drops below the set tail current, for one minute, the absorption stage will end and the float stage will start. This setting can be disabled by setting it to zero.Temperature compensationThis setting sets the temperature compensation coefficient that is needed for temperature compensated charging.Many battery types require a lower charge voltage in warm operating conditions and a higher charge voltage in cold operating conditions. The configured coefficient is in mV per degree Celsius for the whole battery bank, not per cell. The base temperature for the compensation is 25°C (77°F).The chart below indicates the absorption and float charge voltage behaviour at different temperatures. The graph displays the temperature compensation for a 12V system and uses a -16mV/°C temperature compensation coefficient. For a 24V system multiply the voltages by 2.By default, the solar charger uses its internal temperature for battery temperature compensated charging. An internal temperature reading is taken in the morning and then again when the e solar charger has been idle for at least one hour, for example when the charger is not actively charging a battery or supplying a load.When the solar charger is part of VE.Smart Networking and receives a battery temperature reading from a Battery Sense or a battery monitor with a temperature sensor, the actual battery temperature will be used for temperature compensated charging throughout the day.Low temperature cut-offThis setting is used to prevent damage to a lithium battery by disabling charging at low temperatures.The "Low temperature cut-off" feature is only active when the solar charger is part of a VE.Smart network and is receiving a battery temperature reading from a Battery Sense or a battery monitor with temperature sensor.The "low temperature cut-off" setting is by default disabled. When enabled, a low cut off temperature can be set. The default temperature is 5°C, this is a suitable temperature setting for lithium iron phosphate (LFP) batteries. However, always check with the lithium battery supplier to find out what this temperature should be set at.The "low temperature cut-off" mechanism will stop battery charging when the battery temperature has dropped below the low temperature cut-off setting. Battery charging will resume once the battery temperature has risen 0.5°C above the low temperature cut-off setting.Note that setting "low temperature cut-off" is not needed for Victron Lithium Smart batteries or for Victron Super Pack batteries with serial number HQ2040 and above. This setting is only needed for lithim batteries that are unable to block charging when the temperature drops too low. 5.2.2. Load output settingsThe load output settings used to control the VE.Direct TX port or the , enabling it to operate a BatteryProtect, a relay or another load-shedding device. For more information, see the chapter TX port settings.The available operation modes are:BatteryLife (default setting):This algorithm is self-adapting and aims to maximise the battery's lifespan. For a detailed explanation of its functionality, please refer to the BatteryLife chapter for a description of its functionality.Conventional algorithm 1:12V system: OFF when Vbatt < 11.1V, ON when Vbatt > 13.1V.24V system: OFF when Vbatt < 22.2V, ON when Vbatt > 26.2V.Conventional algorithm 2:12V system: OFF when Vbatt < 11.8V, ON when Vbatt > 14.0V.24V system: OFF when Vbatt < 23.6V, ON when Vbatt > 28.0V.Always off:The load output is always OFF.Always on:The load output is always ON.User defined algorithm 1:OFF when Vbatt < Vlow.ON when Vbatt > Vhigh.User defined algorithm 2:OFF when Vbatt < Vlow or Vbatt > Vhigh.ON when Vbatt is between Vlow and Vhigh.The "always off" and the "always on" modes will respond immediately. The other modes have a 2-minute delay before the load output changes. This is so that the solar charger does not respond too quickly when, for example, an inrush current briefly lowers the battery voltage below the threshold.The load output settings also control the streetlight algorithm. Both work together to protect the battery from being too deeply drained. The streetlight settings are overridden should the battery voltage falls below the load disconnect voltage. When the battery voltage increases to the load reconnect voltage, the streetlight function will resume. 5.2.3. Streetlight settingsThe streetlight function enables the solar charger to automatically control night lighting. It will automatically determine when the light should be on or off and can control the light intensity.When the streetlight function is enabled a timer program can be created whereby Sunset, Sunrise as well as Midnight can be used as anchor points for the timer program. These anchor points will automatically adjust depending on length of the night as this changes with the seasons.Streetlight controlThe solar charger controls the streetlight:The streetlight algorithm is always applied in conjunction with the settings as configured in the Load output menu:If the streetlight is disabled, then the (virtual) load output is controlled only by the configuration as made in the load output menu.If streetlight is enabled, then it's an AND function: the load output will be on when both the conditions made in the Load output menu are satisfied as well as the streetlight settings. Otherwise, it's off.Make sure that load output setting is set to "Always on" or to "BatteryLife". Do not set it to "Always off" as this will result in the light being always off.For more configurable voltage levels to force the light off, the other load output options can also be used.Setting the Sunset actionAt sunset you can choose any of the following actions:Keep the lights off Switch on for a fixed time:This option will turn the light on at sunset, and then off again after a configurable interval. When the dimming feature is enabled1 (1), two dim-levels can be entered: one for the "on" period; and a second for the "off" period. A typical use case for these options is to get a strong light during high traffic hours (right after sunset), and lower intensity during the low hours, to save the battery. Set the second dim level to 0% to switch the light completely off during that second section.Switch on till midnight:This option turns the light on at sunset, and then off again at midnight. When the dimming feature is enabled1, two dim-levels can be entered: one for the "on" period (up to midnight) and a second dim-level for the "off" period after midnight. Set the second dim level to 0% to switch the light completely off during that second section.Switch on till sunrise:This options turns the light on at sunset, and then off again at sunrise. When this option is selected; there is no need to also select an action at sunrise, so the sunrise control option is not needed. When the dimming feature is enabled1, only one dim level can be configured, the dim level at sunset. 1) The dimming feature requires the TX Port function to be configured to one of the "Light dimming" settings. This so the TX port outputs a PWM signal that can be used to dim the light. If the TX port function has not been set to one of the "Light dimming" settings, the dimming options will not appear in the sunset settings menu. Also see the TX port settings chapter.Setting the Sunrise actionAt sunrise you can choose to:Switch off: Turns the light off at sunrise.Switch on before sunrise:This option switches the light on at a configurable time interval before sunrise, and then switches the light off at sunrise.In case the dimming feature is enabled1 an interval of more intense light can be configured during early morning rush hour. Together with the Sunset action, you can now configure three dim levels: one for the sunset rush hours, one during the low traffic hours, and the third for the early morning rush hours.MidnightThe charger has no real time clock, and therefore does not know when it is 12 o'clock at night. All references to midnight refer to what we call solar midnight, this is the mid-point between sunset and sunrise.Midnight and Sunrise synchronisationThe solar charger needs to have its internal clock synchronised with the solar cycle so it can set the solar midnight and sunrise anchor points in the timer program.After the streetlight settings have been programmed and the solar charger is powered up, the solar charger will start unsynchronised. It will first assume that midnight is 6 hours after sunset, and that the full night last for 12 hours.Once in operation, the solar charger will check the time between each detected sunrise. After three full day/night cycles, where the detected time is approximately 24 hours (one hour of deviation is allowed), it will start using its internal clock, instead of the fixed 6 and 12 hour timing.A loss of power (no battery power together with no PV power) will cause the solar charger to loose its synchronisation. It will take 5 days before it is re-synchronised. Note that the streetlight configuration settings and all other settings will never be lost, they are stored in a non-volatile memory.Sunset and sunrise detection The sunset and sunrise detection voltage settings can be used to adjust the detection to match the panel configuration. The sunrise detection voltage must be 0.5V higher than the sunset detection level. The lowest detectable voltage is 11.4V. Set this option to 0 to use the built-in defaults, which are:Sunset = Vpanel < 11.4V.Sunrise = Vpanel > 11.9V.The default setting is 0, which uses built-in default voltages.Use the "Delay" periods to avoid the system making an accidental switch when clouds pass over the panels. The valid range is between 0 and 60 minutes. The "Delays" are disabled by default (0).Gradual dimming speedThe gradual dimming option can be used to slow down the response of the timer program. This is useful when multiple streetlights are used in a row. This helps to mask the fact that each timer uses its own detection and will have a transition moment which will vary from unit to unit.The dimming settings can be adjusted. You can input the number of seconds required to achieve each percentage-point of change (x seconds/per 1% of dimming). A number from 0 to 100 can be entered. Two examples:0 = immediate response (gradual dimming disabled):A setting of 0 will achieve an immediate response, this effective means that the gradual dimming option is disabled.9 = dim from 0 to 100% in 15 minutes:Setting the dimming speed to 9, for example, slows down the dimming speed to 15 minutes (9 seconds for each percentage point of dimming x 100 percentage points = 900 seconds = 15 minutes.Make sure that the TX port function is set to "Light dimming" mode (as described in point 1 at the beginning of this chapter) and connect a VE.Direct TX digital output cable to the PWM dim input of your LED driver.Mid-point shift The time of midnight is estimated based on solar activity, and depends on your geographical location. Daylight saving times can cause a further deviation between the "solar" and the "clock" midnight. The Mid-point shift function will compensate for these differences. Use 0 to disable the shift (default).The Mid-point shift setting is only relevant when your streetlight setting program uses "Midnight" as a switching moment.Calculation Example:For calculation we use a day of 1440 minutes, where Sunset is at 19:00 (1140 minutes) and Sunrise is at 6:25 (385 minutes):The night duration in minutes is: 1440m(min/day) -1140m(time to sunset) + 385m(time to sunrise) = 685m.The degree of shift = time of sunset(minutes) + half the duration of night(minutes) - length of day(minutes) = 1140m + 342m - 1440m = 42 minutes.Example configuration The selections which have been made on above screen image results in this program:At sunset - the light will be switched on for a fixed time.Dim level at sunset - at Full brightness (100%).Keep lights on during - the duration has been set to 1h 0m.Dim level at end - at the end of one hour the brilliance will be reduced to half (50%).Also:At sunrise - the lighting will be adjusted before sunrise.Time before sunrise - at 1h 0m before sunrise, the following adjustment will be made:Dim level - full brilliance will be restored (100%).The VE.Direct-TX port can be used to send a signal to an external device. For example, to send a PWM signal to dim a streetlight.To use the TX port, a VE.Direct TX digital output cable is needed.The functionality of the TX port can be set at:Normal communication:This is the default setting. Use this function when connecting to a GX device, a VE.Direct Bluetooth Smart dongle, or any other device that needs to communicate with the solar charger via the VE.Direct port.Pulse every 0.01 kWh:Use this function in combination with an energy meter.The TX port will emit a pulse each time an additional 0.01kWh of energy has been harvested. The TX port is normally high and will be driven low for approximately 250ms for every 0.01kWh harvested.Light dimming (PWM normal):Use this function in combination with the "Streetlight" setting.The TX port PWM* signal will be at 100% duty cycle when full light intensity is required.Light dimming (PWM inverted):Use this function in combination with the "Streetlight" setting.The TX port PWM* signal will be at 0% duty cycle when full light intensity is required.Virtual load output:Use this function to create a virtual load output if the solar charger does not have a physical load output.The TX port will switch using the same conditions as set in the load output settings.Connect the VE.Direct TX digital output cable to a BatteryProtect module, a relay or directly to the remote on/off connector of the load**.*) The PWM signal is 5V, 160Hz.**) The TX port is a logic 5V signal. It can drive a maximum of a 22kOhm impedance load, where the output voltage is dropped to 3.3V. Make sure that the connected load is within this specification.Note that these functionalities (other than the first functionality) do not disable the ability of the unit to communicate. What happens is that the unit will automatically detect incoming data, and while data is being received, it will resume normal communication. Once the data reception has been completed, it will automatically return to its configured TX function.For more in-depth "developer style" information on the VE.Direct port see the Data communication with Victron Energy products document.The VE.Direct-RX port can be used to receive a signal from an external device. For example to switch the solar charger on (or off) from a signal sent by a battery management system (BMS).To use the RX port for remote on/off control a VE.Direct non inverting remote on/off cable is needed.The functionality of the RX port can be set at:Remote on/off:This is the default setting. This functionality will switch the solar charger on or off via the RX pin.- RX pin to GND will switch the solar charger off.- RX pin floating or to battery positive will switch the solar charger on.Load output on/off inverted:This setting reverses the load output on/off control:- RX pin 0V will switch load output on.- RX pin +5V will switch load output off.Load output on/off normal:This setting allows load output on/off control:- RX pin 0V will switch the load output off.- RX pin +5V will switch load output on.For more in depth "developer style" information on the VE.Direct port see the Data communication with Victron Energy products Whitepaper. Best settings for Renogy charge controller with AGM battery setup. Currently using a Renogy 40 amp controller with 12v AGM setup. Battery's are Eaton pwhr12540w4fr battery's. Some people say not to charge AGM over 14.4 and some say to over charge them. What do you guys think? Settings I am able to adjust in USER mode are in the image. Renogy 40 amp charge controller 6 100 Watt Solar panels 6 AGM 135ah battery's 3000 Watt Renogy Inverter Settings look close enough for me. Is that a preset or can each be tailored? Overcharging AGM batteries should only be done in accordance with manufacturer's recommendation in most cases. Overcharging AGM usually has a negative outcome. According to these resources: These appear to be classified as UPS batteries given the website URL at the bottom of the datasheet. This is further evident by only the specification of a float charge in the 13.5-13.8V range and a relatively low 100% DoD cycle life of 260 cycles. UPS batteries are designed to be held fully charged for very long periods of time with only occasional high current rapid discharges running backup power while some other system comes on line (generator). They are typically recharged slowly via a 13.5-13.8V float which will eventually get them back to full charge after a couple days. They generally have a relatively poor cycle life and are not typically regarded as deep cycle. This type of battery does not generally perform well in a cyclic application. Can you return them? Whatever the case, the charge parameters you provided seem reasonable for an AGM battery. IMHO, you should avoid discharges below 70-80% unless absolutely necessary. To me the battery's seem to be performing very well. We used a furnace, 40"tv, fridge, and charging 3 devices over night and still had plenty of power left by morning. In the morning we used a coffee maker and also and tea kennel which are 1500 watts each and still were around 75% battery. By noon the battery's were at 14.4 volts and started float charging at 13.8. We picked these battery's up for only $35 each. For the way they are performing we are more than happy. Just wondering what people are using for settings on AGM battery setup. Technical questions and answers about the Mazda Bongo Moderators: Doone, westonwarrior Stevievee Bongolier Posts: 156 Joined: Thu Sep 12, 2019 8:36 am Location: West Yorkshire Post by Stevievee » Sun Sep 25, 2022 8:33 am Hi, Any advice on this would be most useful! I am upgrading my solar set up and need some help on solar controller settings. I have a new 150w panel, with a Renogy Rover cc, charging a xtreme 200ah xr3500 battery. As this is an AGM battery I believe I am able to change the settings manually on the cc to meet the needs of AGM charging, but what should these be? I searched everywhere to try answer my own question, but am getting baffled with lots of different information! Something in layman's terms would be great! Thanks g8dhe Supreme Being Posts: 10611 Joined: Sun Apr 13, 2008 10:06 pm Location: Worthing, West Sussex. Post by g8dhe » Sun Sep 25, 2022 9:00 am Normally there is a menu of battery types you select the right battery type from it. There isn't a single parameter as it depends on time/current/temperature, basically once the battery is classed as full then the charging voltage is dropped to the float voltage. Be aware however that if you also have a Split Charge Setup then all the benefits will be lost as the alternator doesn't know about AGM batteries and simply keeps blasting it with 14.4v (approx) all the time your driving! agm-battery-charging-stages-graph3.png (36.58 KiB) Viewed 3850 times Geoff 2001 Aero V6, AFT, full side conversion. Stevievee Bongolier Posts: 156 Joined: Thu Sep 12, 2019 8:36 am Location: West Yorkshire Post by Stevievee » Sun Sep 25, 2022 4:02 pm Thanks for the reply. I think the Renogy solar charge controller have prefix of Lead, Gel or flooded as options with lead and flooded having equalisation as part of the charge sequence. I do have a split charger, but I thought that would never be able to fully charge an AGM battery? Due to this I also have a Noco Genius 10 (with specific AGM setting) that I plug in when at home or when on EHU. Should I put an isolation switch in, to disconnect solar when driving as to not charge from 2 sources at the same time? Stevievee Bongolier Posts: 156 Joined: Thu Sep 12, 2019 8:36 am Location: West Yorkshire Post by Stevievee » Sun Sep 25, 2022 4:26 pm Probably don't need the split charger. Having solar, then smart charger on EHU. Very rare we wild camp to be fair! g8dhe Supreme Being Posts: 10611 Joined: Sun Apr 13, 2008 10:06 pm Location: Worthing, West Sussex. Post by g8dhe » Sun Sep 25, 2022 5:52 pm Which specific charge controller do you have they all have the Rover designation! I was going to look to see if there was a User Manual. If it really doesn't have AGM in the menu then to be honest you would be better off using a standard flooded LB which is more robust about charging requirements, otherwise you will find that while an AGM will work your won't get the lifetime you expect by which time its too late to return under warranty! AGM's were designed for things like Golf carts, wheelchairs etc, where they have a specific charger for them and a nice steady charge/discharge pattern including a deep discharge rating. If the Solar controller doesn't support AGM, the Alternator doesn't either, and most EHU chargers are set for float charging only. So you won't at the end of the day get a better performance but you will pay a premium for the battery! Geoff 2001 Aero V6, AFT, full side conversion. Stevievee Bongolier Posts: 156 Joined: Thu Sep 12, 2019 8:36 am Location: West Yorkshire Post by Stevievee » Sun Sep 25, 2022 9:59 pm It's: Renogy 20A MPPT Charge Controller, 20 Amp 12V/24V DC Input MPPT Charge Controller Auto Paremeter Adjustable LCD Display Solar Panel Regulator fit for Gel Sealed Flooded and Lithium Battery Stevievee Bongolier Posts: 156 Joined: Thu Sep 12, 2019 8:36 am Location: West Yorkshire Post by Stevievee » Sun Sep 25, 2022 10:00 pm The Noco I have bought will provide a full AGM charge with Solar 'topping up' in between? g8dhe Supreme Being Posts: 10611 Joined: Sun Apr 13, 2008 10:06 pm Location: Worthing, West Sussex. Post by g8dhe » Mon Sep 26, 2022 8:37 am The Renogy manual has Deep Cycle Sealed which is effectively the same as AGM batteries. Geoff 2001 Aero V6, AFT, full side conversion. Stevievee Bongolier Posts: 156 Joined: Thu Sep 12, 2019 8:36 am Location: West Yorkshire Post by Stevievee » Mon Sep 26, 2022 11:02 am This is what the battery manufacturers sent about charging, saying all the info is on here... Could be written in German to me! Means nothing!! g8dhe Supreme Being Posts: 10611 Joined: Sun Apr 13, 2008 10:06 pm Location: Worthing, West Sussex. Post by g8dhe » Mon Sep 26, 2022 12:04 pm Just choose "Deep Cycle Sealed" for the battery type and that is all that should be necessary, it will (according to the manual) adjust the parameters itself over a few charge/discharge cycles. Geoff 2001 Aero V6, AFT, full side conversion. Stevievee Bongolier Posts: 156 Joined: Thu Sep 12, 2019 8:36 am Location: West Yorkshire Post by Stevievee » Mon Sep 26, 2022 2:59 pm You have been REALLY helpful Geoff. Thank you, it's very much appreciated! A solar charge controller has various settings that need to be altered for it to function properly, such as voltage & ampere settings. Today you will get to know about solar charge controller settings along with solar charge controller voltage settings. Solar Charge Controller The amount of power generated from the solar panel travels to the inverter batteries. This power needs to be maintained and regulated. A solar charge controller is used for this purpose. It sends short energy pulses to the battery. The average output produced by an MPPT solar charge controller can be 42 volts. You will require additional batteries to produce higher voltages. Here is the catch: to prevent your batteries from damage, you need to choose the right solar charge controller. Just installing a charge controller won't solve all your problems. There are different settings that need to be checked and manually adjusted. Different types of batteries like Lithium Iron Phosphate (LIPO), lithium, iron phosphate, lead-acid, and Absorbent Glass Mat (AGM) batteries have different settings. However, there are only two types of charge controllers. 1. MPPT controller or maximum power-point tracking controller 2. PWM controller or pulse width modulation controller Before starting to set up the solar charge controller, you need to understand its functioning of it. Here are the points that you need to keep a note of while installing and setting up the solar charge controller. Once the battery is fully charged, the battery will not hold more solar energy in comparison to the chemical content. If the battery is charged high, it can result in the development of heat and gas inside the battery. Electrolytes inside the battery began to expand. This further led to the development of bubbles. This chemical process leads to the generation of hydrogen gas, which is explosive. An overcharged battery will decrease the capacity and increase the aging process of the battery. The Parameters: 1. Battery Floating Charging Voltage The voltage at which a battery is maintained once it is fully charged is known as the battery floating charging voltage. This voltage maintains the capacity of the battery by self-discharging it. The typical voltage for a 12V system is 13.7V and for a 24 V system, it is 27.4V. 58.4V is the voltage for a 48V system. 2. Battery Over-Discharging Protection Voltage It is also known as under voltage cutoff voltage and its value should also be in accordance with the battery type. In solar charge controller settings, the voltage value range for a 12V system is 10.8V to 11.4V. For a 24V system, it is 21.6V to 22.8V, and 43.2V to 45.6V for a 48 V system. So, the typical values are 11.1 V, 22.2 V, and 44.4 V. 3. Battery Overcharging Protection Voltage This voltage value should be set as per the battery type. This voltage is also termed a fully charged cutoff voltage or over-voltage cutoff voltage. This voltage value for a 12-volt system ranges between 14.1 V and 14.5 V. For a 24-volt system, it is 28.2V to 29V and for a 48V system, it is 56.4V to 58V. So overall, the typical value for the voltage is 14.4V, 28.8V, and 57.6V. 4. Charge Controller Capacity It is the maximum number of amperes that your solar charge controller can handle. It is the parameter on the basis of which a solar charge controller is rated. It can be 10A, 20A, 30A, 40A, 50A, 60A, 80A, or 100A. 5. Maximum Charging Current It is the maximum output current of the solar panels or solar arrays. It is the output that you receive from the batteries. 6. System Voltage It is also known as the Rated Operational Voltage of your solar power system which refers to the battery bank voltage (direct current operational voltage). Usually, the value is 12V, 24V, or 48V. However, a medium-scale or a large-scale charge controller system has voltage values of 110V and 220V. Also See: What Size Charge Controller for 200W Solar Panels? These are the most critical settings that need to be done carefully for the better functioning of the solar charge controller. A solar charge controller is capable of handling a variety of battery voltages ranging from 12 volts to 72 volts. As per the basic solar charge controller settings, it is capable of accommodating a maximum input voltage of 12 volts or 24 volts. You need to set the voltage and current parameters before you start using the charge controller. This can be done by adjusting the voltage settings. Here is the list mentioning the most critical voltage settings for the solar charge controller. Absorption Duration: (Adaptive/Fixed) Absorption Voltage: 14.60 volts Automatic Equalization: (Disabled / Equalize every X Days) Disabled Equalization Current Percentage: 25% Equalization Duration: 4 hours Equalization stop mode: (Fixed Time / Automatic on Voltage) Fixed time Equalization Voltage: 14.40 volts Float Voltage: 13.50 volts Low-Temperature Cutoff (optional): Disabled Maximum Absorption Time: 6 hours to 3 minutes (max) per 100Ah battery capacity Maximum Absorption Rate: 30 minutes per 100Ah battery capacity Manual Equalization: Select start now Maximum Equalization Duration: 3-4 hours Re-Bulk Voltage offset: 0.1 volts Tail Current: 2.0A Temperature Compensation (mV/°C): 27.7 volts / 40° Celsius-25° Celsius Note: Settings can be changed manually on the controller or from the PC Software. Follow the instructions of the manufacturer for the best results. While you set up your new solar charge controller, you should begin with properly wiring the controller to the battery bank and solar panels properly. Once the wiring is properly done and the controller detects the power, its screen will light up. Other steps are as follows: 1. Enter the settings menu by holding the menu button for a few seconds. 2. Charge current PV to Battery will be displayed 3. Battery Type Selection can be done by pressing the menu button for a long time. 4. The battery voltage will be auto-detected by the controller. 5. According to the user manual, set the setting for absorption charge voltage, low voltage cutoff value, float charge voltage, and low voltage recovery value. 6. If the system has an option for setting up the discharge value for DC, then set it as per the user manual. 7. Once the setting is done, the charge controller will instantly start the charging process. Also See: How Many Batteries Can a 50 Watt Solar Panel Charge? The user manual of a PWM or a pulse width modulation solar charge controller contains information regarding the following: A solar charge controller has a digital display that displays a number of things on the panel through abbreviations or signs and symbols. Here is the list of those things and what they mean. A panel with a small sun shining indicates the solar panel charge. An arrow near the panel when it is bold black means the system is on Aqualation or buck when the arrow is flicking it means it is on float mode. A square filled with horizontal bars indicates battery. Near the battery sign, there is an arrow indicating the output. A bulb sign indicates the load V% indicates the voltage AH is for ampere hours A square-shaped box indicates a menu. It is used for switching between different displays. You can enter or exit the setting by pressing it for a long time. An up arrow is used to increase the value A down arrow showing a decrease in the value To browse different interfaces in the solar charge controller settings, press the menu button. The LCD or key display discussed in point 1 is the main display. Next displays in order when you press the menu are: Float Voltage – The screen shows LIT, voltage, and the battery Discharge Reconnect – Shows LIT, voltage, battery, output (arrow), and load (bulb) Under voltage Protection – Displays LIT, voltage, empty battery symbol, and load (bulb) Work Mode – It displays hours (H), output (arrow), and load (bulb). OH, means dawn to dusk, 24H means load output is for 24 hours, and 1-23H means the load is on after sunset and closed after sunrise hours. Battery Type – LIT and the battery box with horizontal bars, determine the amount of battery charged and the type of battery. LIT is for lithium. After this, you are again on the main display. Important: To switch On or Off the load manually on the main display, press the down key. 3-stage PWM charge management A built-in industrial microcontroller with adjustable parameters A pulse width modulation solar charge controller has the following features: Battery Switching functions between lithium and lead battery. The lithium battery is the default setting and switches it to the battery type interface by holding it for 3 seconds. Dual metal–oxide–semiconductor field-effect transistor (MOSFET) Reverse current protection with low heating dissipation In-built protection for short-circuit open circuits, overload, and reverse Every electrical appliance comes with a list of safety instructions that are prepared according to the appliance. A PWM controller has the following safety instructions mentioned in its user manual. Do not connect another charging source with the charge controller. The controller is suitable only for regulating solar modules. For the controller to recognize the battery type, ensure the battery has enough voltage before you begin the installation process. Install the controller on a well-ventilated and flat surface. While running, the controller will be heated. This controller is suitable for lithium batteries. All kinds of lead batteries (open, AGM, and gel) are also compatible with it. To minimize loss, keep the battery cable as short as possible. In solar charge controller settings, it contains instructions related to the connection. It tells you which port you need to connect to which wire. Connect the battery to the charge regulator (plus and minus) Connect the consumer to the charge regulator (plus and minus) Connect the photovoltaic module to the charge regulator (plus and minus) This section contains all the information regarding the voltage, amperes, input, output, size, weight, etc. of the PWM solar charge controller. Batt voltage – 12 volts / 24 volts auto adapt. Charge current – 10A (KYZ 10), 20A (KYZ 20), 30A (KYZ 30) Discharge current – 10A (KYZ 10), 10A (KYZ 20), 10A (KYZ 30) Max solar input – less than 41 volts Model – (KYZ 10) (KYZ 20) (KYZ 30) Operating temperature – -35 ~+60° Celsius Size or weight – 133*70*355 millimeters or 140 grams Standby current – greater than 10 mA USB output – 5 volts / 2 A Max The technical parameters of lithium and lead batteries under certain parameters are mentioned in the table below. Type of BatteryEqualizationFloatUndervoltage ProtectionDischarge ReconnectLithium (LIT) battery12.8 volts12.0 volts (default, adjustable range 11.5-12.8 volts)10.7 volts (defaults, adjustable range 9.0-11.0volts)11.6 volts(defaults, adjustable range 11.0-11.7volts)Lead acid battery (bAt)14.4 volts13.7 Volts (defaults, adjustable range13-15V)10.7V (defaults, adjustable range9.0-11.0 Volts)11.6 Volts (defaults, adjustable range11.0-11.7V) Every electronic appliance faces some problem that can be easily resolved with troubleshooting. The basic problem and its solution are mentioned under the troubleshooting column in the PWMM user manual. Here I have mentioned the problem – probable cause – solution. Charge icon not on when sunny – Solar panel is open or reversed – Reconnect Load icon off – Battery low – Recharge Load icon off – Mode setting wrong – Set again Load icon slow flashing – Overload – Reduce load watt Load icon slow flashing – Short circuit protection – Auto-reconnect Power off – Battery too low reverse – Check battery or connection Also See: What Size Inverter to Run a TV After the solar charge controller settings for a 12V system, the 24V system is the most common charge controller used in residential solar power systems. The basic settings for this are mentioned in the user manual of your charge controller. However, here are a few basic settings that are for a 24V system. Battery Floating Charging Voltage is 27.4V Battery Over-discharging Protection Voltage is 21.6V to 22.8V Battery Overcharging Protection Voltage is 28.2V to 29V Solar charge controller settings for AGM battery The solar charge controller setting for an AGM or Absorbent Glass Mat battery is also for 12 volts, 24 volts, or 48 volts. The maximum charge current should be at 50A maximum per 100Ah battery capacity. The absorption voltage should be 14.60 volts and the float voltage at 13.50 volts. Equalization voltage at 14.40 volts and bulk voltage offset at 0.10 volts. Absorption duration should be adaptive, and duration should be between 6 hours to 30 minutes per 100Ah battery capacity. The current percentage for equalization is at 25% and its duration at 4 hours max. Before you begin setting up your lithium batteries, remember that lithium batteries do not require temperature compensation. Also, if you are replacing lead batteries with lithium batteries and the settings are set at Equalized this needs to be changed. To change this, select, EQE (Master equalizer enable/disable) on the charge controller display. This can also be done by selecting OFF the dip switch in other controllers. Some common settings for a multi-stage charge profile need to be set to the following settings: Charge voltage – 14.4 volts (3.6 VPC) Absorption time – 30 minutes to balance lithium cells Float voltage – 13.6 volts Resting voltage (default) – 3.4 VPC The lead acid battery is a classic configuration in a solar power system. Once you convert the battery type from lithium/AGM to lead acid battery, the original set parameters for a lead acid battery will be used. These configurations are already installed in the charge controller system. And sometimes, it is just plugging and using the system. Well, today you learned about the alteration in solar charge controller settings in accordance with the type of batteries your inverter has. Also, solar charge controller voltage settings should be carefully done to get the maximum potential output from the solar charge controller. Recommended: Solar Charge Controller Load Output Working... 😀 😂 😘 😎 😟 😣 ☕