Operation

After connecting the battery to the charge controller, the controller will turn on automatically. The user will be prompted by an initialization screen for a few seconds followed by the Default Screen.



NOTE: In some models, you might be prompted to enter a password. Simply put "0" all the way through and press enter.

NOTE: To customize charge parameters, TYPE must be set to <u>USER</u> under <u>5. Rated Value</u>.

NOTE: The values found in your controller are default values and will not necessarily match the ones listed. The values on this table are to show the user what the different screens are used for.

NOTE: You do **NOT** have to program the control. These parameters are for extra features. Once you connect the battery the settings are automatically synced.

	Ψ <i>1</i> -	to maneuver through the screens
	PV 0.0V 0.0A	Indicates the voltage (V) and amperage (A) that the solar panel(s) are delivering to the controller
	BATT 12.5V 0.0A	Indicates the voltage (V) and amperage (A) that the solar panel(s) are delivering to the battery
	TEMP 20.0 C ° SOC 7%	Indicates the ambient temperature as well as the SOC (State of charge) of the battery NOTE: If the remote temperature sensor is connected, the temperature will reflect that temperature instead
	LOAD 12.5V 0.0A	Indicates Load voltage (V) and amperage (A) draw
PV: BAT LOA DE	Disconnect TT: NoCharge/ Normal \D: On /ICE: Normal	System status of components—PV panels, Battery status, Load status, and Device functionality.
	Charg. Energy Day: 0.00kWh Mon: 0.00kWh Total: 0.00kWh	The kilowatt hours accumulated in a day, Month, and total since the controller has been turned on NOTE: Once the battery is disconnected, the values are reset to 0 unless there is an external battery installed on the controller face
	・ 道: ご Jan01 12:12:12	: 選: System status icons, date, and time.

	↑ /+	↓/-	to cycle through the screens. Press ENTER/ → to select
Device Set Date: 00-00-0000 Time: 00:00:00			Modify the date and time for the charge controller. Time is displayed in military time (24Hr) and will be reflected in the default screen. Select Save when finished. The user will have to select save parameters after every screen.
	Save Pa > <mark>Save</mark> Dev ID Backlit	ice Set : 000 sec	Modify the time the backlight is on for the charge controller. Backlit operation is in effect once the last button is pressed. The user could use the ID to connect to a tracer meter and save parameters. Select
Ten	Dev np Unit: > <mark>Cel</mark>	ice Set Fah	Choose between Celsius or Fahrenheit when viewing system status temperature.
NOTE	To custon Otherwise	nize charge this screen	parameters, TYPE must be set to USER under <u>5. Rated Value</u> . is only for information in regards to the charge parameters.
Par	ameter Set np Compens 0 mV / C ° /	ate Coeff 2V	Indicates Temperature Compensation. Temperature fluctuation can affect performance in the system. Therefore, the purpose of temperature compensation is to adjust the performance of the system to keep the system functioning normally.
- 0 3.			

Parameters for commencing Equalization Charging, Boost Charging, and Float Charging.
Parameters for Boost Voltage Reconnect, Boost Under-Voltage Reconnect, and Boost Under-Voltage warning.
Parameters for controller Low Voltage-Reconnect, Low Voltage-Disconnect, and the Discharge Limit.
Parameter for setting a time duration for when the controller approaches Equalization Charging and Boost Charging.
le through the screens. Press ENTER/ → to select
A load selection menu allows the user to control the load terminal activation automatically, manually, or with a timer.
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Manual Light On/Off Light On+Timer Time	In Light On/Off, the user sets parameters to turn the load on or off.
Light On/Off On: 05.0V Delay: 10m Off: 06.0V Delay: 10m	The load terminal automatically turns on when the solar voltage goes BELOW the point of NTTV (Night Time Threshold Voltage). The load automatically turns off when the voltage goes ABOVE the point of DTTV (Day Time Threshold Voltage). There is a delay between turning the load on or off and can be programmed to be from 0-99minutes.
Light On + Timer On: 0 5.0V Delay: 10m Off: 06.0V Delay: 10m Night Time: 12:00	Similar to Light On/Off parameter with the addition of a timer that the user sets in order to indicate how long a load will be on or off. The user also sets an appropriate time for when it is night time. NOTE: Timer needs to be activated for it to work.
Time Control 1 On Time: <mark>1</mark> 9:00:00 Off Time: 06:00:00	 Using a 24-hour clock, the user is able to set the time for when the load will turn on and the time for when the load will turn off.
5. Rated Value	
se $\uparrow /+$ $\downarrow /-$ to cyc OTE: To customize charge paramete	le through the screens. Press <mark>ENTER/ →</mark> to select ers, BATT must be set to <u>USER</u>
Rated Value Batt: <mark>AUTO</mark> 0200AH Load: 20.0A PV:20.0A Type: Seal	For <u>BATT</u> : the user selects which battery describes the one they have— <u>12V, 24V, or AUTO</u> For <u>Type</u> : The user chooses from <u>Gel, Sealed,</u> <u>Flooded or USER</u> The user is able to modify the Amp-hours (AH) to reflect the actual battery capacity. NOTE: The Load and PV options will not be adjustable since the value is based on the charge controller

Use	↑/+		↓/-	to cycle t	hrough the screens. Press	ENTER/ →	to select
Loa	ad: > <mark>O</mark> N	Test M	ode OFF		Test the load of the char have been set in <u>4. Load</u> whether the load will turn NOTE: Delay must be se results.	ge controller <u>Set</u> , the use on upon dire et to "0" to	. Once settings or is able to test oction. see immediate
7	. Pass	word					
Use	↑ / +		↓/-	to cycle t	hrough the screens. Press	ENTER/ →	to select
Ori. Nev	.PSW: 0 wPSW: (Passw 00000 000000	ord		Setting a password for the from programming the co- is set. NOTE: Default Password user to enter a password b	e controller pr ntroller unles is "00000" if pefore they so	ohibits the use s the password it prompts the et one.
8	. Batt	Mng N	ode				
Use	↑/+		↓/-	to cycle t	hrough the screens. Press	ENTER/ →	to select
	> <mark>V.C.</mark>	att Mng	Mode S	OC	Voltage Compensation an Managing modes to deter	d State of Cl mine battery	harge Battery charge status.
NOTE refere contr distu when whicl	E It is n ence. In t VC. c oller's al rbances SOC i reportin h it flowe	ot possi his case onverts gorithm thus hav s more a g batter d.	ble to m it is volta a readin for know ing less a ccurate b y charge	easure actu nge alone (\ g from ba n discharge accurate ba y keeping tu status. The	ual SOC, but rather express /C) or battery capacity over a ttery voltage to determine e. It is highly sensitive to tem ttery charge statuses. rack of the voltage and currer s SOC is determined by multi	it as a perc time span (So SOC by utiliz perature char at flow in and o plying curren	entage of some DC). zing the charge nges and battery out of the battery t by the time for
9	. Facto	ory Re	set				
Use	↑/+		↓/-	to cycle t	hrough the screens. Press	ENTER/ →	to select
	F	actory	Reset		Reset the controller to fac	tory settings	. This will erase

Really to reset? > <mark>NO</mark> YES		The screen will be followed up by a secondary screer to make sure a factory reset is what the user intends to do.	
10. Reboot Device			
Use	to cycle t	hrough the screens. Press ENTER/ → to select	
Reboot Device? >NO YES		This parameter will repeat the charge controller	

System Status Icons





System Status Glossary

PV: Disconnect BATT: NoCharge/ Normal LOAD: On DEVICE: Normal

PV Status	Meaning				
Connect	PV is Connected				
Disconnect	PV is Disconnected				
Measure Err	Measurement Error at the PV terminal				
Over Current	PV is Overcurrent				
MOS-I Short	(Metal oxide semiconductor) used for PV reverse polarity is short.				
MOS-C Short	(Metal oxide semiconductor) used for charging is short.				
MOS Break	(Metal oxide semiconductor) in control circuit is damaged				
BATT Status	Meaning				
Equalize	Battery is equalizing				
Boost	Battery is in boost mode				
Float	Battery is in float mode				
NoCharge	No charge to battery				
LVD	Low voltage disconnect				
UVW	Under voltage warning				
Normal	Battery is normal				
OVD	Over voltage disconnect				
Error	Battery experiencing error				
OverTemp	Battery is too hot, over temperature				
LOAD Status	Meaning				
On	Load On				
Off	Load Off				
Overload	Load is overloaded				
Short	Load connection is short				
Error	Load experiencing error				
MOS Short	Metal oxide semiconductor used in load is short				
DEVICE Status	Meaning				
Normal	Charge controller normal				
OverTemp	Charge controller too hot				

System Status Troubleshooting

Indicator	Status	Description	Troubleshoot
	Connect	The controller recognizes the PV solar panel(s). System is functioning normally.	N/A
	Disconnect	The controller does not recognize the solar panel(s).	If it is nighttime, the light will be off. Otherwise double check that the poles are not switched.

Indicator	PV Status	Troubleshoot
	Measure Err	Check connections and make sure there is not a short somewhere along the line. Use a multi-meter to determine whether the panel(s) output is normal prior to connection. Then reset the controller to factory settings.
	OverCurrent	Use a multi-meter to determine whether solar panel(s) specification match the nominal parameters of the charge controller.
	MOS-I Short	Reset the controller to factory settings. If problem persists, contact the supplier
	MOS-C Short	Reset the controller to factory settings. If problem persists, contact the supplier
	MOS Break	Reset the controller to factory settings. If problem persists, contact the supplier
Indicator	BATT Status	Troubleshoot
	Error	Check that the battery connections are properly connected to the battery terminals of the charge controller. Make sure there is no short along the line. Reboot the controller. If problem continues, reset the controller.

	OverTemp	Place the controller in a cooler environment where it will automatically reconnect.
	OVD	Check battery parameters and make sure they are suitable to be used with the charge controller. Use a multi-meter to check battery voltage to reaffirm the controller's diagnosis.
Indicator	LOAD Status	Troubleshoot
	Overload	Check to make sure the devices connected to the load terminal are within the load specification. If so, then reduce the number of loads and it will reconnect automatically.
	Short	Check the device wiring and connections going into the load. There may be a break in the wire.
	Error	Reset the controller to factory settings. If problem persists, contact supplier.
	MOS Short	Reset the controller to factory settings. If problem persists, contact supplier.
Indicator	Device Status	Troubleshoot
	OverTemp	Place controller in cooler environment and it will automatically reconnect.