EG4®12kPV HYBRID INVERTER

MONITOR SYSTEM WORKING MODES



The EG4 12kPV Hybrid Inverter has several different preset working modes that allow the user to configure the system to meet their demands through extensive customization. By following this guide, the user can easily set the station's needs depending on the time of day among several other factors.

Working Mode Definitions:

Backup Mode

Used to save battery power as a last resort. The solar arrays power the loads, and when PV is insufficient, loads will pull from the grid. The inverter will only power loads with battery when there are no other options.

Peak Shaving

Peak shaving is used to avoid peak demand charges from the grid by using a combination of settings to limit the power drawn from the grid.

AC Charge Mode

The system will operate in a pre-set priority system. In this mode, the user will experience the inverter drawing power from the solar arrays to power the loads. When/if the solar power is insufficient, the inverter will then switch to bypass mode to power loads from AC input and will utilize grid power to charge the batteries. The inverter will only power loads with battery when there are no other options.

PV Charge Priority

This mode allows the user to prioritize battery charging from PV, specifically. If there is excess PV power after the batteries are charged, then the inverter will utilize the excess power to send to loads.

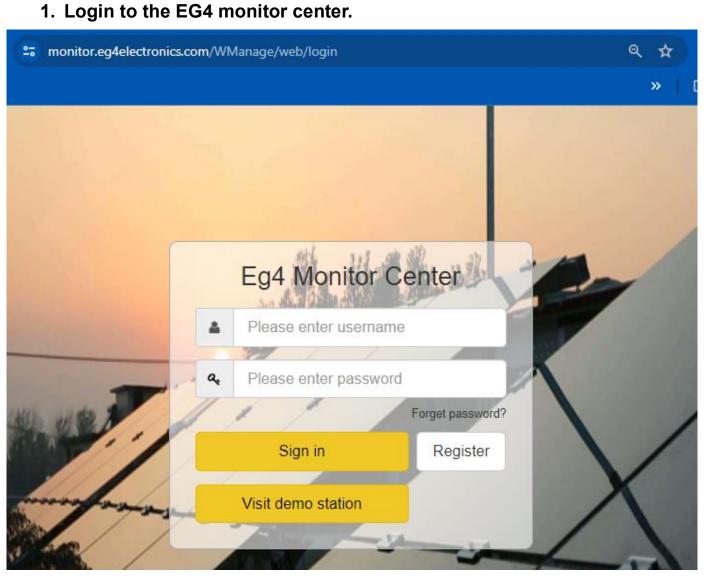
Force Discharge/Export PV Only

The user can configure the inverter to forcefully sell PV and/or battery power back to the grid through a combination of settings.

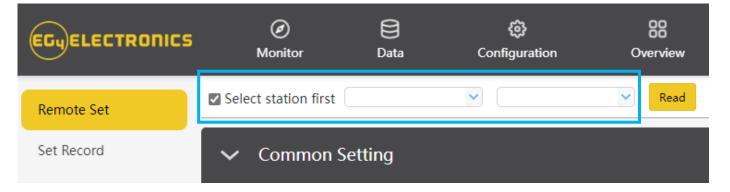
Self-Consumption Mode

The system will operate in a pre-set priority system. In this mode, the user will experience the inverter drawing power from the solar arrays to power the loads. When/if the solar power is insufficient, the inverter will then draw from the battery bank for loads. Only as a last resort will the inverter switch to bypass mode to power loads from AC input.

To activate these different working modes, the user must login to the EG4 Monitoring System through a web browser. Follow the steps listed in this guide to navigate to the working modes section of the monitoring system.



2. Select the station to be configured.



3. Select "Read".

EGUELECTRONICS	Ø Monitor) Data	 Configuration 	Overview
Remote Set	Select station first		✓	Read
Set Record	🗸 Common S	etting		

4. Navigate to the "Maintenance" tab.

EGUELECTRONICS	Ø Monitor	Data	(දූ) Configuration	Overview	ि Maintenance
\bigcirc	Monitor	Data	Configuration	Overview	Maintenance

5. Select "Working Mode" in the top-right corner.

EGUELECTRONICS) Data	🔅 Configuration	Overview	E Maintenance	🖈 🕅 English	1 -	
Remote Set	Select station first		♥	Read			Working Mode	Export PDF
Set Record	🗸 Common S	etting						

6. Scroll down past "Application Setting" and find the "Working Mode Setting" section.

✓ Working Mode Set	ting											
Active Mode												
Backup Mode												
Peak Shaving												
AC Charge Mode												
PV Charge Priority												
Forced Discharge/ Export PV Only												
Self Consumption	01:00	03:00	05:00	07:00	09:00	11:00	13:00	15:00	17:00	19:00	21:00	23:00

The user will now have direct access to configure the system to their own needs by utilizing a combination of settings and time of use periods.

The following section describes the different modes of operation and descriptions of each setting associated with each mode.

Backup Mode

 Working Mode Setti 	ing											
Active Mode												
Backup Mode Peak Shaving												
AC Charge Mode												
PV Charge Priority												
Forced Discharge/ Export PV Only												
Self Consumption	01:00	03:00	05:00	07:00	09:00	11:00	13:00	15:00	17:00	19:00	21:00	23:00
Battery Backu	up Mode Enable	Disable										
AC Charge Power(kW	/) (?)	-	0kW	[0, 25.5]	Set			Start			End	
Backup SOC(%) (?)				[0, 100]	Set		T1	00 : 00	Set	23 :	59 Set	
Backup Volt(V) (?)				[42, 59]	Set							

When setting the station in this mode, the inverter will use batteries as a last resort. The user will be able to configure the system to set how much power is drawn from the grid; at what percentage, voltage, and time to stop and start charging.

Upon selecting the working mode, the system must be configured using the settings listed below:

Battery Backup Mode

Set to enable. The system will use the batteries as a last resort during the set timeframes.

AC Charge Power(kW)

Set the maximum power drawn from the grid to charge batteries.

Backup/Stop AC charge SOC(%)/Volt (V)

Percentage at which the system will stop charging batteries from the Grid.

T1 Start/T1 End

Set the start and end time of charging.

Peak Shaving

✓ Working Mode Set	tting										
Active Mode											
Backup Mode Peak Shaving											
AC Charge Mode PV Charge Priority											
Forced Discharge/ Export PV Only Self Consumption	01:00 03:	00 05:00	07:00	09:00	11:00	13:00	15:00	17:00	19:00	21:00	23:00
	03:	00 05:00	07:00	09:00	11:00	13:00	15:00	17:00	19:00	21:00	23:00
	Grid Peak-Shaving (?) En	able Disable									
Grid Peak-Shaving Powe	er(kW) (?)	okw	[0, 25.5]	Set	Grid Peak-Sha	ving Power2(kW)	?)		0kW	[0, 25.5]	Set
Start Peak-Shaving Volt	: 1(V) (?)	0V	[40, 59]	Set	Start Peak-Sha	aving Volt 2(V) (?)			0V	[40, 59]	Set
Start Peak-Shaving SOC	1(%) (?)	0%	[0, 100]	Set	Start Peak-Sha	aving SOC 2(%) (?)			0%	[0, 100]	Set
•	Start [0, 23] : [0, 59] Set		End	Set		T2 [0, 23]	Start : [0, 59] Set		-	End 0, 23] : [0, 59] Se	et

When setting the station into this mode, the inverter will use peak-shaving to avoid peak demand charges from the grid. The user will be able to configure the system to pull limited (or no) power from the grid for charging batteries or powering loads by setting maximum power in kW, according to SOC/voltage, and by setting time of use.

Upon selecting the working mode, the system must be configured using the settings listed below:

Grid Peak-Shaving

Set to enable or disable grid peak-shaving.

Grid Peak-Shaving Power(kW)/Grid Peak-Shaving Power2(kW)

Set the maximum amount of power that will be drawn from the grid.

Start Peak-Shaving Volt 1(V)/Start Peak-Shaving Volt 2(V)

Set the starting point of peak-shaving when using voltage setpoints for batteries.

Start Peak-Shaving SOC 1(%)/Start Peak-Shaving SOC 2(%)

Set the starting point of peak-shaving when using SOC setpoints for batteries.

T1/T2 Start

Set the start time of peak-shaving depending on SOC/voltage as configured above.

T1/T2 End

Set the end time of peak-shaving depending on SOC/voltage as configured above.

AC Charge Mode

🗸 🗸 Working Mode Set	ling										
Active Mode											
Backup Mode											
Peak Shaving											
AC Charge Mode											
PV Charge Priority											
Forced Discharge/ Export PV Only											
Self Consumption	01:00	03:00	05:00	07:00	09:00	11:00	13:00	15:00	17:00	19:00 21:00	23:00
AC Ch	arge Enable (?) Enable	e Disable									
AC Charge Power(k	(Y) (W)		0kW	[0, 25.5]	Set			Start		End	
AC Charge Based Or	n (?)			<empty th="" •<=""><th> Set </th><th></th><th>п</th><th>[0, 23] : [0, 59] Se</th><th>t</th><th>[0, 23] : [0, 59] Set</th><th></th></empty>	 Set 		п	[0, 23] : [0, 59] Se	t	[0, 23] : [0, 59] Set	
Start AC Charge SO	C(%) (?)			[42, 59]	Set		T2	[0, 23] : [0, 59] Se	t	[0, 23] : [0, 59] Set	
Stop AC Charge SO	C(%) (?)			[0, 100]	Set		ТЗ	[0, 23] : [0, 59] Se	t	[0, 23] : [0, 59] Set	
Start AC Charge Vol	t(V) (?)			[40, 57]	Set			(r-1 [6/ 60]	
Stop AC Charge Vol	t(V) (?)			[42, 59]	Set						

When setting the station into Backup/AC Charge mode, the user can configure the system to prioritize charging batteries from grid power. The user can configure to charge with grid based on maximum power in kW, SOC/voltage, and by setting times of use.

Upon selecting the working mode, the system must be configured using the settings listed below:

AC Charge Enable

Set to enable or disable the system's ability to charge batteries from the grid.

AC Charge Power(kW)

Set the maximum power drawn from the grid to charge batteries.

AC Charge Based On(SOC/Volt/Time)

Configure how the system will charge batteries from the grid by setting custom voltage points, SOC% of batteries, or by time.

Backup/Stop AC charge SOC(%)/Volt (V)

Percentage at which the system will stop charging batteries from the Grid.

Battery Backup Mode

When enabled, the system will use the batteries as a last resort during the set timeframes.

PV Charge Priority

V Working Mode Set	ling									
Active Mode										
Backup Mode										
Peak Shaving										
AC Charge Mode										
PV Charge Priority										
Forced Discharge/ Export PV Only										
Self Consumption	01:00	03:00 (05:00 07:00	09:00	11:00	13:00	15:00	17:00	19:00 21:00	23:00
PV Char	ge Priority (?) Enable	Disable								
PV Charge Power(kW) (?)			okw	[0, 25.5] Set			Start [0, 23] : [0, 59]	Set	End [0, 23] : [0, 59] Set	
PV Charge Priority Stop S	SOC(%) (7)		cutoff: 0%	0 Set		T2		Set	[0, 23] ; [0, 59] Set	
PV Charge Priority Stop 1	Volt(V) (?)		Charge: 0V cutoff: 0V	0 Set		73	[0, 23] : [0, 59]	Set	[0, 23] : [0, 59] Set	

When setting the station into this mode, the order of priority for solar will be Battery > Load > Grid. During the PV Charge Priority period, loads are first supplied from grid power. If there is excess solar power after charging the batteries, the excess solar will power the loads along with the grid.

Upon selecting the working mode, the system must be configured using the settings listed below:

PV Charge Priority

Set to enable or disable the battery priority/PV Charge Priority working mode.

PV Charge Power(kW)

Set the maximum amount of power to charge the batteries from solar.

PV Charge Priority Stop SOC(%)

Set the stop point for Battery Priority according to SOC%.

Battery Priority Stop Volt(V)

Set the stop point for Battery Priority according to voltage.

T1/T2/T3

Set up to 3 different start and stop times for the PV Charge Priority working mode.

Off-Grid Mode

Set to disable.

Forced Discharge/Export PV Only

`	 Working Mode Setti 	ing												
\langle	Active Mode													
	Backup Mode													
	Peak Shaving													
	AC Charge Mode													
	PV Charge Priority													
$\left(\right)$	Forced Discharge/ Export PV Only													
	Self Consumption													
	ser consumption	01:00	03:00	05:00	07:00		09:00	11:00	13:00	15:00	17:00	19:00	21:00	23:00
	ser consumption	01:00	03:00	05:00	07:00		09:00	11:00	13:00	15:00	17:00	19:00	21:00	23:00
	sen consumption	01:00	03:00	05:00	07:00		09:00	11:00	13:00	15:00	17:00	19:00	21:00	23:00
	Forced Discharge Enable		03:00	05:00	07:00		09:00 Disable	11:00	13:00	15:00 Start	17:00	19:00 End		23:00
			03:00	05:00	07:00	Enable		11:00	13:00	Start	17:00			23:00
	Forced Discharge Enable	Ø	03:00	05:00	07:00	Enable	Disable	11:00		Start [0, 23] : [0, 59]		End	9] Set	23:00
	Forced Discharge Enable Export PV Only (7)	თ kw) თ	03:00	05:00		Enable	Disable	11:00	T1 T2	Start [0, 23] : [0, 59]	Set	End [0, 23] : (0, 5 [0, 23] : (0, 5	9] Set 9] Set	2300
	Forced Discharge Enable Export PV Only (7) Forced Discharge Power()	თ kw) თ	03:00	05:00	[0, 25.5]	Enable	Disable Disable Set	11:00		Start [0, 23] : [0, 59]	Set	End	9] Set 9] Set	2300

When setting the station into this mode, the batteries will be forced to discharge within the set periods of time. During this period, the inverter will discharge the battery at the power set by "Forced Discharge Power(kW)" until the battery SOC or voltage set point reaches the "Stop Discharge" value.

Upon selecting the working mode, the system must be configured using the settings listed below:

Forced Discharge Enable

Set to enable this setting to forcefully discharge the station's battery bank.

Export PV Only

Enable this setting to sell back generated PV power to the grid.

Forced Discharge Power(kW)

Set the maximum power limit of battery discharge.

Stop Discharge SOC(%)

Stop the forced discharge upon reaching the set SOC%.

Stop Discharge Volt(V)

Stop the forced discharge upon reaching the set voltage point.

T1/T2/T3

Set up to 3 different start and stop times for the Force Discharge/Sell To Grid working mode.

Self-Consumption

V Working Mode Se	etting											
Active Mode												
Backup Mode												
Peak Shaving												
AC Charge Mode												
PV Charge Priority												
Forced Discharge/ Export PV Only Self Consumption												
Sen consumption	01:00	03:00	05:00	07:00	09:00	11:00	13:00	15:00	17:00	19:00	21:00	23:00

The station will default to Self-Consumption mode. The order of priority for powering loads is Solar > Battery > Grid. The order priority for solar power is Load > Battery > Grid which creates an ideal scenario when needing to prioritize solar power generation over other types of power.