

EG4 18K Monitor System User Interface (UI)

Introduction

Version:1.1

Date:2020-07-07

History

Version	Record of modification	Date
Initial version	Initial version	2020-04-6
1.1	Change some picture according to new design	2020-7-7

The purpose of this Document is to introduce the User Interface (UI) of the Lux Power Monitoring System to Lux Power users. The monitoring system may change due to updates, so if you find the following UI descriptions vary from the display, please contact EG4Electronics.com for assistance if you have any questions.

Introduction

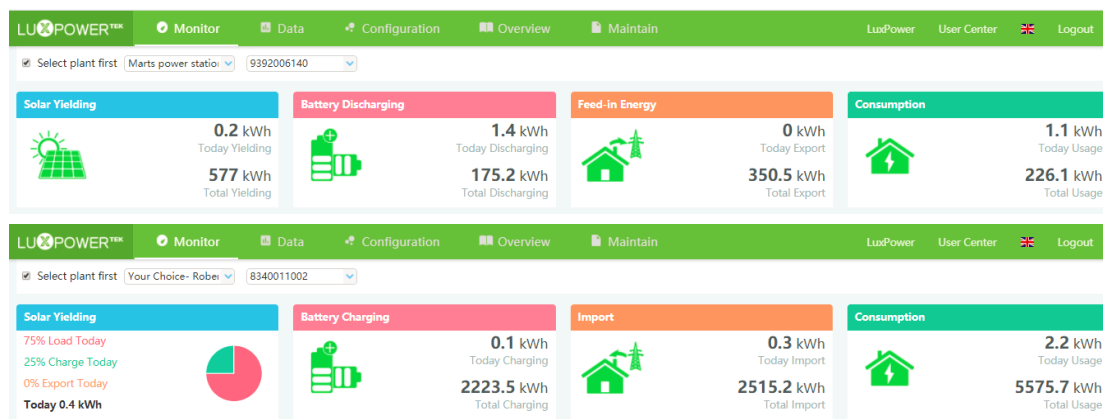
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1. Monitor

“Monitor” view is for customers (end users) to easily check real-time system information (including Battery, Photo Voltaic (PV), Emergency Power Supply (EPS) and Grid data), with both daily & total figures for solar yielding, battery charging/discharging, feed-in energy & consumption.

1.1 Dash board



Solar Yield: The data shows power generated by the solar panels. For AC coupled inverters it shows the power generated by the grid tie inverter. To be able to show the data correctly the PV CT clamp for the AC ESS inverter will have to be installed. When the picture of the solar yield is clicked or touched (on the EG4 app), it will switch to portion display of how the solar energy has been used that day and a second click or touch shows the totals since commissioning. It shows the percentage portion of load supplied, charge of battery and export to grid.



Monitor System UI

Introduction

Battery Discharge/Battery Charge: The data shows the charge and discharge energy from the battery/batteries. When the battery picture is clicked or touched the display will switch between battery discharging and battery charging, showing totals for that day and since commissioning.

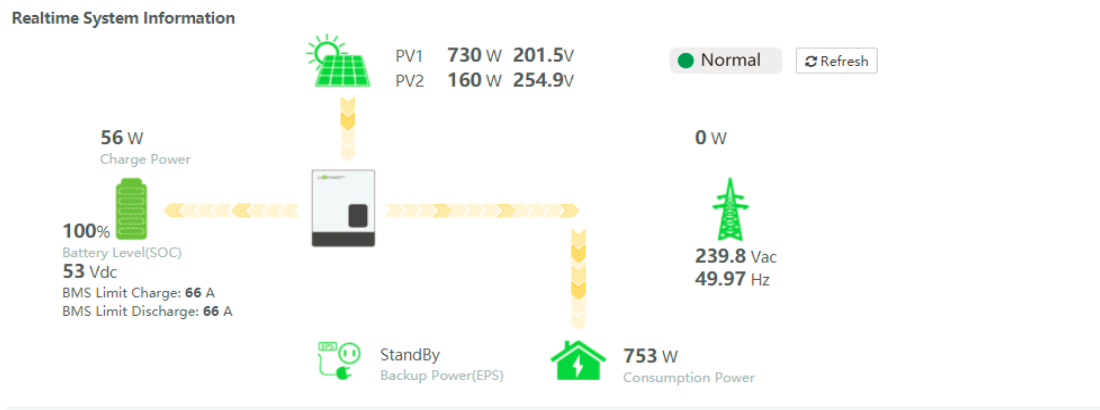
Feed-in Energy/Import: It shows energy exported to grid for that day and since commissioning. When the picture is clicked or touched it shows energy imported from the grid for that day and since commissioning.

Consumption: The data shows the total energy consumption of the property for that day and since commissioning.

Introduction

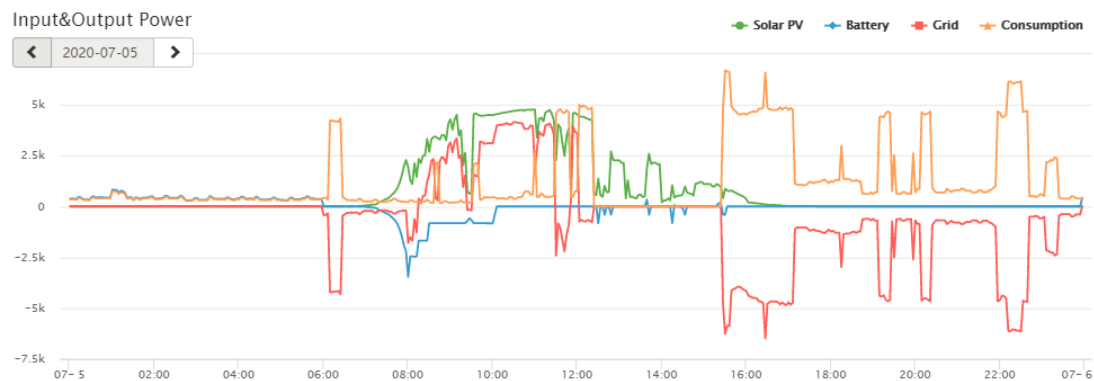
1.2 Real time System Information

The picture shows the live energy data, with dynamic flows. When the battery image is clicked it will show battery charge and discharge limitation. When the battery's color is yellow or red it means there is a warning or fault with the battery.



1.3 Input & Output Power (daily)

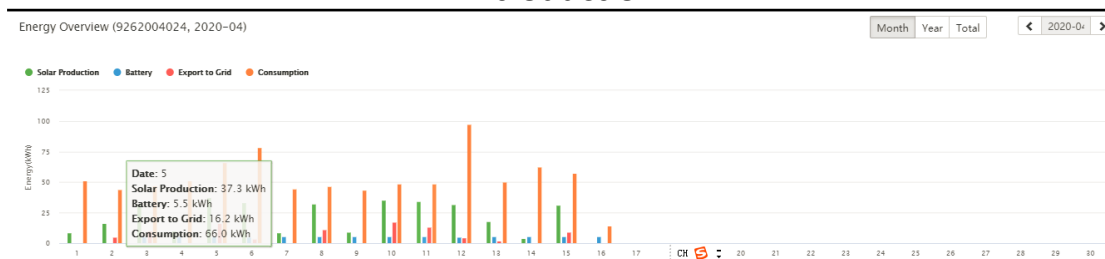
The picture shows the power curve for each day, including solar power, battery charge/discharge power and grid import/export power and consumption.



1.4 Energy Overview

With the 'Month' box highlighted the graph shows the energy statistics for each day. When the 'Year' icon is clicked or touched it will show energy for each month and when the 'Total' icon is clicked or touched it will show energy for each year.

Introduction



2. Data

“Data” view shows more detailed running data, which helps for analysis and maintenance, including detailed technical parameters of PV, battery, grid and EPS.

“Data” view consists of five sections: “Chart”, “Energy”, “History data”, “Local data” and “History event”. Please see below for more information on each section.

2.1 Chart



Chart shows how key parameters of “PV side”, “Battery”, “AC Side” and “EPS” change along with time over a 24 period.

Below is the meaning of each parameter abbreviation with the 18K naming rule clarified.

Ppv: Power of solar input (first letter “P” stands for power, lower-case letter “pv” stands for PV)

SOC(%): Battery/batteries - State of charge.

Vacr: Voltage of AC output (“V” stands for voltage, “ac”: AC, “r”: phase R)

Qac: Reactive power of AC output (“Q” stands for reactive power)

Vepsr: Rated voltage of EPS(Emergency Power Supply)

Feps: Frequency of EPS

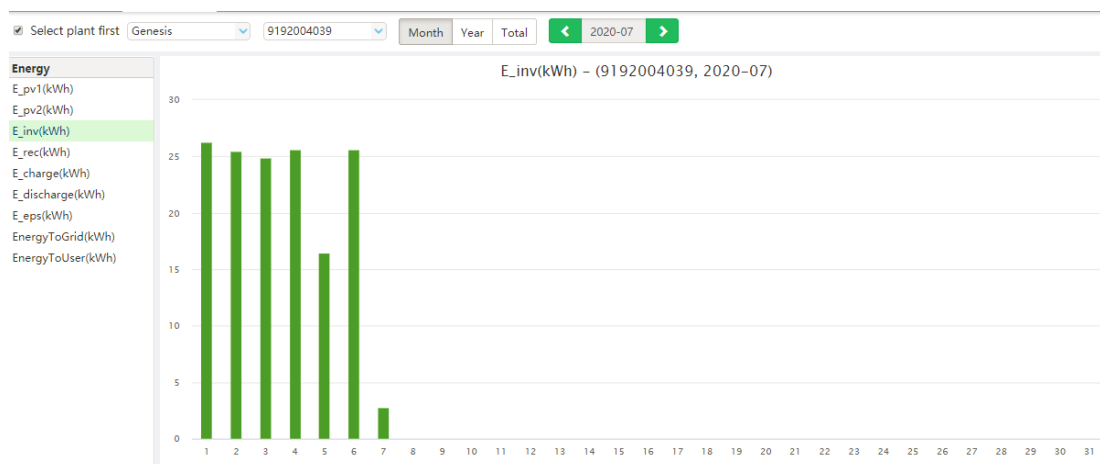
Peps: Out put power of EPS

Seps: apparent power of EPS (first letter “S” stands for apparent power)

pToGrid: power feed in to grid

2.2 Energy

Introduction



“Energy” section: above various bar charts show how energy (y-axis) changes with time, daily, by date (x-axis) in one month.

E_pv1(kWh): Energy generated by PV string1

E_pv2(kWh): Energy generated by PV string2

E_inv(kWh): Energy output via AC output

E_rec(kWh): Energy of AC charge

E_charge(kWh): Energy used for battery charge

E_discharge(kWh): Energy output by battery discharging

E_eps(kWh): Energy output via EPS

EnergyToGrid(kWh): Feed-in energy

EnergyToUser(kWh): Energy import from grid

2.3 History Data

The “History data” section are the measured technical parameters of PV, battery, EPS and Grid, mainly for 18K or its distributor’s analysis to quickly address problems that may have occurred.

It is considered that professional, technical knowledge is required to fully understand this table. It is suggested that end users focus on the “Monitor” view, “Chart” section and “Energy” sections only as these provide easy to understand performance data.

It is suggested that 18K distributors should focus on the key parameters below to carry out rapid troubleshooting for their end users:

1. **PtoGrid/PtoUser** (to check if CT was connected correctly)
2. **Vpv/Ppv** (to check the MPPT)
3. **Vo/Po/So** (to check load type and if there is an overload when in EPS mode)
4. **Vb/SOC** (to check current state of charge and if battery is over charged or discharged)
5. **Vac/Fac** (to evaluate Grid performance and to check if working voltage and frequency range is adjusted to comply with Grid)
6. **E-xxday** (to evaluate energy distribution), **Exxall** (to check if the system is working well under off grid mode)

Monitor System UI

Introduction

LUPOWER™

Monitor

Data

Configuration

Overview

Maintain

Viewer1

User Center

 Logout

Chart

Select plant first

Chú ngò long an

9432004005

2020-07-07

Export data

Export data (2020-07-07 - 2020-06-30)

Energy

History data

Local data

History event

	Serial num	Time	Status	Vp1(V)	Vp2(V)	vBat(V)	SOC(%)	Ppv1(W)	Ppv2(W)	pCharge	pDisCharg	Vacr(V)	Fac(Hz)	Pinv(W)	Prec(W)	PF	Vepsr(H)	Feps(H)	Peps(W)	Seps(V)	pToGrid	pToUse	pLoad	
History data	1	9432004005	2020-07-07 14:41:12	0x0C	287.2	268.7	55.6	100%	1273	1912	37	0	198.5	50.04	3071	0	1	198.5	50.04	0	0	0	4438	7509
	2	9432004005	2020-07-07 14:38:12	0x0C	285.2	268.8	55.8	100%	1283	1913	37	0	195.1	49.97	3080	0	1	195.1	49.97	0	0	0	4156	7236
	3	9432004005	2020-07-07 14:35:12	0x0C	283.3	269.3	55.8	100%	1297	1938	40	0	205.5	49.99	3125	0	1	205.5	49.99	0	0	0	4831	7956
Local data	4	9432004005	2020-07-07 14:32:12	0x04	285.2	268.7	55.2	100%	1319	1953	0	0	203.7	49.92	3167	0	1	203.7	49.92	0	0	0	4662	7829
History event	5	9432004005	2020-07-07 14:29:12	0x0C	284.2	272.9	55.7	100%	1330	1968	36	0	206	49.9	3180	0	1	207.1	49.94	0	0	0	4915	8095
	6	9432004005	2020-07-07 14:26:12	0x0C	287.2	276.8	55.6	100%	1405	2033	36	0	203.9	50.01	3305	0	1	203.9	49.98	0	0	0	4588	7893
	7	9432004005	2020-07-07 14:23:12	0x0C	283.3	268.9	55.7	100%	1339	1965	36	0	208.4	50.07	3183	0	1	208.4	50.07	0	0	0	4995	8178
	8	9432004005	2020-07-07 14:20:12	0x0C	283.1	271.7	55.7	100%	1342	1971	34	0	204.2	49.85	3194	0	1	204.2	49.85	0	0	0	4650	7844
	9	9432004005	2020-07-07 14:17:12	0x0C	286.2	269.9	55.8	100%	1343	1980	37	0	205	50.09	3205	0	1	205	50.09	0	0	0	4739	7944
	10	9432004005	2020-07-07 14:14:12	0x04	284.9	267.8	53.3	24%	1347	1987	0	0	204.8	50.04	3225	0	1	205	50.05	0	0	0	4592	7817
	11	9432004005	2020-07-07 14:11:12	0x04	287.2	271.1	53.3	24%	1361	2004	0	0	200.9	49.92	3250	0	1	200.9	49.92	0	0	0	4369	7619
	12	9432004005	2020-07-07 14:08:12	0x04	284.2	270.8	53.3	24%	1388	2009	0	0	206.4	50.2	3282	0	1	206.4	50.2	0	0	0	4803	8085
	13	9432004005	2020-07-07 14:05:12	0x04	285.2	269.8	53.3	24%	1377	2019	0	0	210.5	50.13	3283	0	1	210.5	50.13	0	0	0	5105	8388
	14	9432004005	2020-07-07 14:02:12	0x04	285.3	268.9	53.3	24%	1384	2027	0	0	210	49.79	3298	0	1	209.9	49.81	0	0	0	5089	8387
	15	9432004005	2020-07-07 13:59:12	0x04	286.2	268.8	53.3	24%	1386	2032	0	0	206.4	49.73	3301	0	1	206.4	49.71	0	0	0	4675	7976
	16	9432004005	2020-07-07 13:56:12	0x04	285.2	268.8	53.3	24%	1394	2045	0	0	207.3	49.79	3321	0	1	207.3	49.79	0	0	0	4722	8043
	17	9432004005	2020-07-07 13:53:12	0x04	288.1	270.9	53.3	24%	1396	2056	0	0	206.4	49.86	3334	0	1	206.4	49.86	0	0	0	4644	7978
	18	9432004005	2020-07-07 13:50:12	0x04	285.3	272	53.3	24%	1398	2062	0	0	204.6	49.79	3339	0	1	204.6	49.79	0	0	0	4433	7772
	19	9432004005	2020-07-07 13:47:12	0x04	287.1	267.9	53.3	24%	1411	2065	0	0	206.6	50.03	3353	0	1	206.6	50.03	0	0	0	4575	7928
	20	9432004005	2020-07-07 13:44:12	0x04	284.2	268.9	53.3	24%	1417	2076	0	0	206.6	49.97	3369	0	1	206.6	49.97	0	0	0	4568	7937

2.4 Local Data

“Local data” section show the data recorded during offline period(s) (loss of Internet or Wi-Fi). It is the same as history data with only the difference being it is for offline data recording.

Note: the local data is captured every 5 minutes and would be recorded when the system is offline for more than 20 minutes. The system can record data for 90 days maximum.

LUPOWER^{TEK} Monitor Data Configuration Overview Maintain User Center Logout

Chart ☒ Select plant first Genesis 9192004039 ☒ Show All local data < 2020-07 > [1, 90] Read Clear Export data

Energy Serial numbi Time Status Vpv1(V) Vpv2(V) vBat(V) SOC(%) Ppv1(W) Ppv2(W) pCharge pDisCharg Vacr(V) Fac(Hz) Plnv(W) Prec(W) PF Vepsr(\) Feps(Hz) Pepts(W) Seps(V) pToGni pToUse ePv1Dx ePv2Dx

History data

Local data

History event

Introduction

2.5 History Event

“History event” section show a historical records of events. (Event types: Notice and Fault)
If there is no “history event” record it means the hybrid inverter is well connected and operating without any problem.

LUPOWER™ Monitor Data Configuration Overview Maintain Aspergo User Center Logout							
Chart	Select plant first			All Event	Export data		
Energy	Plant	Serial number	Event Type	Event	Start Time	Time Recovered	
History data	1 Elangeni Office	9432004014	Notice	Battery voltage low	2020-07-07 06:15:11	2020-07-07 08:06:21	
	2 Office	9432004009	Notice	No AC Connection	2020-07-06 15:18:41	2020-07-06 15:54:52	
Local data	3 Office	9432004009	Notice	Battery failure	2020-07-06 15:09:38	2020-07-06 15:12:39	
	4 Office	9432004009	Notice	Battery voltage low	2020-07-06 12:45:21	2020-07-06 15:09:38	
History event	5 Office	9432004009	Notice	Communication failure with battery	2020-07-06 12:45:21	2020-07-06 15:09:38	
	6 REM Office	9432004010	Notice	No AC Connection	2020-07-06 10:24:02	2020-07-06 10:27:02	
	7 Elangeni Office	9432004014	Notice	Battery voltage low	2020-07-06 06:22:30	2020-07-06 07:55:34	
	8 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 15:24:26	2020-07-05 15:27:28	
	9 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 15:18:26	2020-07-05 15:21:27	
	10 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 15:09:25	2020-07-05 15:12:26	
	11 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 14:45:26	2020-07-05 14:48:27	
	12 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 14:24:28	2020-07-05 14:30:29	
	13 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 14:18:28	2020-07-05 14:21:28	
	14 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 13:42:28	2020-07-05 13:48:27	
	15 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 13:21:31	2020-07-05 13:27:29	
	16 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 12:54:29	2020-07-05 13:00:31	
	17 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 12:36:30	2020-07-05 12:39:33	
	18 Genesis	9192004039	Notice	AC Voltage out of range	2020-07-05 12:27:32	2020-07-05 12:30:28	
	19 Genesis	9192004039	Notice	No AC Connection	2020-07-05 12:24:31	2020-07-05 15:27:28	
	20 Elangeni Office	9432004014	Notice	Battery voltage low	2020-07-05 06:20:45	2020-07-05 07:53:48	

Figure 6 History event section view

3. Configuration

“Configuration” page is used for users to manage their station, datalog and user information.

3.1 Stations

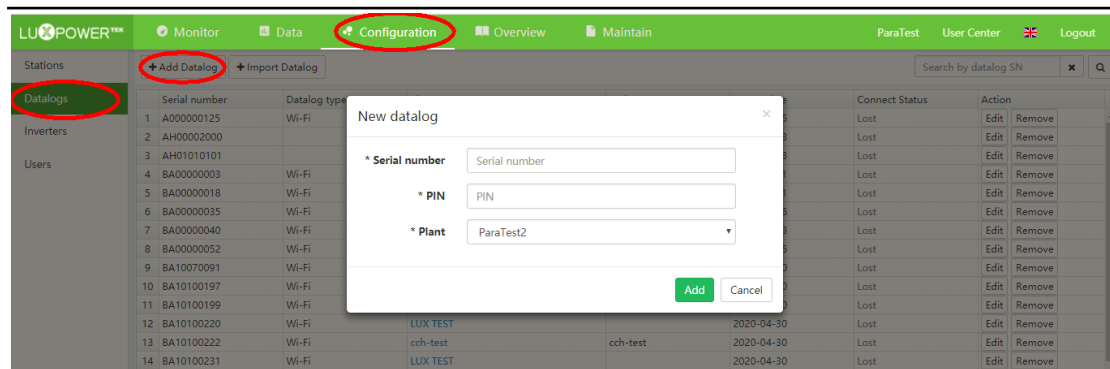
It is used to create another site if you have more than one property with the system installed.

LUPOWER™ Monitor Data Configuration Overview Maintain ParaTest User Center Logout										
Stations	Add Station			Search by station name						
Datalogs	Plant name	Installer	EndUser	Solar PV Power(W)	Country	Timezone	Daylight saving	Address	Create date	Action
Inverters	1 ParaTest2			5000	China	GMT +8	No	shenzhen	2018-09-05	Plant Management
	2 000			200	China	GMT +8	No		2019-01-09	Plant Management
Users	3 XIEYING	xieying		5000	China	GMT +8	No	深圳	2019-09-03	Plant Management
	4 cch-test	para-test	cch-test	5000	United Kingdom	GMT 0	Yes	zhongwubaoan	2019-09-29	Plant Management
	5 sznari test	Lux_sznari		5000	China	GMT +8	No	深圳市南山区高新技术	2019-09-29	Plant Management
	6 能安电站		能安	500	China	GMT +8	No		2019-10-15	Plant Management
	7 重庆光储车棚		深圳清泉	6000	China	GMT +8	No	重庆市	2019-12-06	Plant Management
	8 北京石景山项目		深圳清泉	5000	China	GMT +8	No		2019-12-12	Plant Management
	9 test_berlin	Berlin		3600	China	GMT +8	No		2020-01-16	Plant Management
	10 Three-phase parallel			15000	China	GMT +8	No		2020-03-12	Plant Management

3.2 Datalogs

If users have more than one datalog in the system, they can add the datalog Serial Number (SN) in the station. After adding the datalog on the system and setting the correct password for the wifi data log, the inverter will be showed on the system automatically when powered on. **Note:** Please add the datalog in the monitor system before setting the password for the wifi datalog.

Introduction



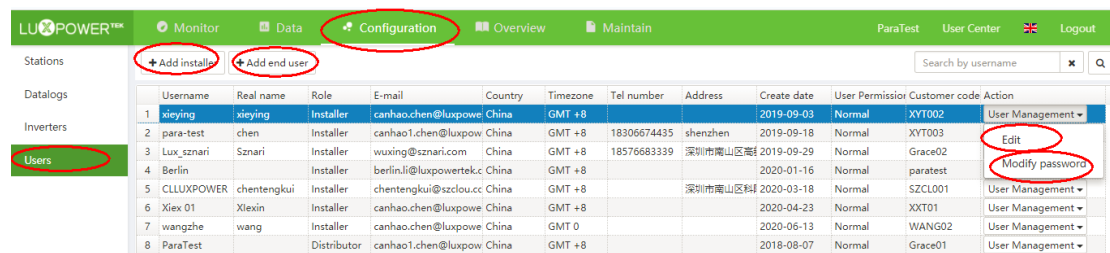
3.3 Inverters

End users can see the inverter list and check if the inverter is online.

3.4 Users

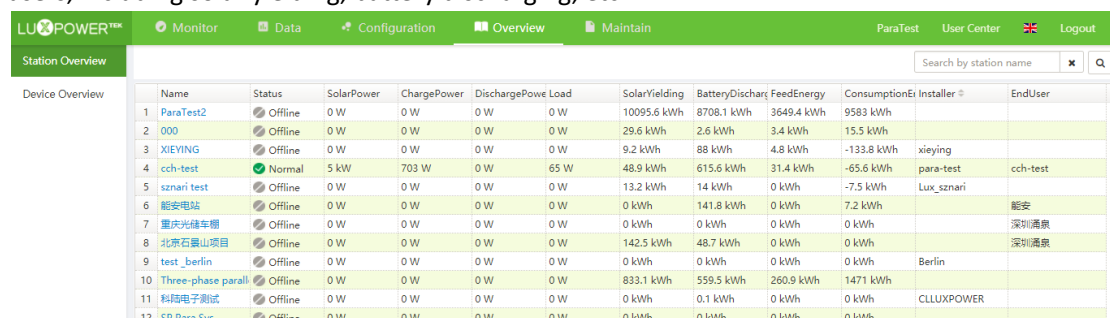
End users can edit password and personal information in the user page.

Distributors can add an installer account and end user account on this page.



4. Overview

“Overview” is for 18K or its distributor to easily check overall system information for their end users, including solar yielding, battery discharging, etc.



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ParaTest

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Station Overview

Normal

Search by inverter SN

Device Overview

Serial number	Status	SolarPower	ChargePower	DischargePower	Load	SolarYielding	BatteryDischarge	FeedEnergy	ConsumptionEnergy	Plant name	Parallel	Action
1 9452006170	Normal	5 kW	703 W	0 W	68 W	21.4 kWh	12.7 kWh	11.5 kWh	20.3 kWh	cch-test		

5. Maintain

“Maintain” view is for remote setting & upgrade. For more instructions about remote setting, please refer to “LXP Hybrid Inverter Website Setting Introduction”.

LUPOWER™																							
Monitor Data Configuration Overview Maintain ParaTest User Center Logout																							
Remote Set		Select plant first LUX TEST		0022004007		Read																	
Batch Set																							
Remote Update																							
Update Record																							
Common Setting																							
Time		yyyy-MM-dd HH:mm:ss		Set		Com Addr																	
PV Input Mode		No PV Panel		Set		Start PV Volt(V)																	
Battery Type						Lead-acid Type																	
Lithium Type				Set Battery																			
Neutral Detect Enable		Enable		Disable																			
Application Setting																							
Power Backup		Enable		Disable		Seamless EPS switching																	
Micro-Grid		Enable		Disable		PV Grid Off																	
Feed-in Grid		Enable		Disable		Feed-in Grid Power(%)																	
Fast Zero Export		Enable		Disable		Normal / Standby																	
Set Master or Slave				Set		Battery Shared																	

18K monitor system also support batch setting function for distributors, so distributor can handle all settings for all inverters at one time. Please refer to “LXP Hybrid Inverter Website Setting Introduction” for batch setting function.

LUPOWER™																							
Monitor Data Configuration Overview Maintain ParaTest User Center Logout																							
Remote Set																							
Batch Set																							
Remote Update																							
Update Record																							
Inverter Selection																							
Select All		Clear All		Search by station name		Select All																	
Plant name		EndUser				Serial number																	
1	ParaTest2																						
2	000																						
3	XIEYING																						
4	cch-test																						
5	sznari test																						
6	能安电站																						
7	重庆光储车棚																						
8	北京石景山项目																						
20		Page 1		of 1		Add to List																	
Displaying 1 to 17 of 17 items																							
Inverter																							
Upload List		Delete All		Save Result		Save Success Result		Save Failure Result		Set													
Status		Serial number		Set Result		Fail Reason		Parameter		Value													



Monitor System UI

Introduction
