

# FelicityESS

## Energy Storage System

**Eco, Smart, Sustainable**



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[www.felicityess.com](http://www.felicityess.com)

Guangzhou · China

Version 2024-05-10



# Introduction

FelicityESS is located in Guangzhou, China, with 16 years of experience from Felicity Group, focuses on mid-to-high-end energy storage markets in Europe, the US, Australia, and South Africa. As a high-tech company in photovoltaic energy storage, FelicityESS offers eco-friendly, smart, sustainable energy storage solutions aimed at delivering high value and quality clean energy to upscale households and business clients. It drives green, low-carbon development and fosters the Broad adoption of clean energy for environmental sustainability.

To meet diverse market and customer needs, FelicityESS has expanded its range to include advanced residential and commercial energy storage products such as off-grid and on-grid inverters, integrated storage systems, and EV charging stations. These additions not only enrich our lineup but also strengthen our core competitiveness in smart energy solutions. Our products offer flexible energy conversion, efficient storage solutions for homes and businesses, and support the growth in electric vehicle charging demand, highlighting our commitment to promoting clean energy vehicles. FelicityESS continues its dedication to R&D and innovation, striving to provide safer, more reliable, And eco-friendlier clean energy products and services globally.



R&D Team:  
**200+**



countries/regions:  
**100+**



Area:  
**40,000 sqm**



R&D Experience:  
**17+ years**



Worldwide Offices:  
**30+**



Patents:  
**100+**





## 2007

Company Establishment.

## 2008-2010

Formation of the company team and development of photovoltaic product series.

## 2011

First solar panel produced.

## 2012-2014

Opened offline shops, achieved \$500,000 sales in 2013.

## 2016-2017

Established first overseas branch in Nigeria.

## 2018-2020

Rapidly expanded its presence across Africa, establishing branches in key countries and essentially covering the entire continent.

## 2021

Expanded to Middle East & America, achieving \$400 million sales, branches in Senegal, Dubai, Uganda, Cote d'Ivoire, Panama, Lebanon.

## 2022

Selected as a famous Brand, business has expanded to countries such as Netherlands, Germany, company's operations now span across numerous European countries, establishing a widespread presence throughout the region.

## 2023

Selected as a leading brand for residential hybrid photovoltaic energy storage products, relocated to an independent, self-sufficient photovoltaic smart park.

## 2024

Felicity Solar Technology Co., Ltd. changed to Felicity Group, comprising Felicity Solar, Felicity ESS New Energy, and Felicity Green Energy subsidiaries.



## Manufacturer

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 Email: sales@felicityess.com  
 Web: www.felicityess.com  
 Add : No. 2, Donghua Huaye Road, Renhe Town, Baiyun District, Guangzhou, China (10mins to Baiyun Airport)

## Europe




### Office in Europe

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### Office in Poland

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### Office in Turkey

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 Add: Block A, Kurban Sokak, Umraniye, Istanbul, Turkey

### Office in Ukraine




Felicity Solar UA TOB  
 Tel: +86 188 0200 2288 / +44 751 057 8947  
 Email: ali@felicitysolar.com  
 Web: www.felicityess.com  
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### Office in UK


Felicity Solar UK Ltd.  
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 Email: europe@felicitysolar.com  
 Web: www.felicityess.com  
 Add: 7 Copperfield Road, Coventry, West Midlands, England, United Kingdom, CV24AQ

## America





### Office in USA

Felicity USA Corporation  
 Tel: +1 626 673 1176  
 Email: joseph@felicitysolar.com  
 Web: www.felicityess.com  
 Add: 13021 Leffingwell Rd; Santa Fe springs CA.90670,USA

### Office in Panama

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 Tel/Whatsapp: +507 6499-8108  
 Email: anaqin@felicitysolar.com  
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### Office in Puerto Rico




Felicity Puerto Rico corporation  
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 Email: joseph@felicitysolar.com  
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 Add: Calle A, Lote 2, Amelia Industrial Park, Guaynabo, 00969,PR,USA

### Office in Mexico

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 Tel: +52 5540860548  
 Email: kelvin-liu@felicitysolar.com  
 Web: www.felicityess.com  
 Add: Rio Rhin 63, Cuauhtémoc,06500 Ciudad de México CDMX, México




## South Africa

### Office in South Africa

Felicity Solar South Africa (PTY) LTD  
 Tel: +27 83 356 8552  
 Email: infoza@felicitysolar.com  
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 Add: A3, Growthpoint Industrial Estate, 1 Bell St, Meadowdale, Germiston, 1614, South Africa

## Australia

### Office in Australia

 Tel: +86 188 2627 4381  
 Email: bruce@felicitysolar.com  
 Web: www.felicityess.com

## Partnership Models

# Join Us

01

### Exclusive Distribution Rights

- Granting exclusive rights to distribute specific product lines or in designated areas.

02

### Non-exclusive Cooperation

- Offering flexible non-exclusive partnership opportunities, allowing the sale of non-competitive brands.

03

### Inventory Support

- Providing stock and logistical support based on the partnership level to ensure continuous product availability.

04

### Marketing and Sales Support

- Supplying marketing materials, product training, and sales strategy support to enhance distributor market performance.



### Hybrid Inverter

T-REX Series



### Battery Pack

LUX-S Series  
LUX-E Series  
LUX-X Series  
LUX-Y Series



### All-in-One Hybrid ESS

Apollo Series  
EV charger  
ZEUS Series



### Balcony ESS Solutions

X-RAY Series  
+  
LUX-S Series



### Commercial ESS Cabinet

FLS Series



### Fsolar Smart Energy Management Platform



# T - REX

Series

# T-REX Hybrid Inverter

T-REX-4.6/5KLP1G01



## Specification



### Product Features



Multi-way MPPT design



Lithium battery activation function



UPS grade on/off grid switching



6 pcs in parallel maximum

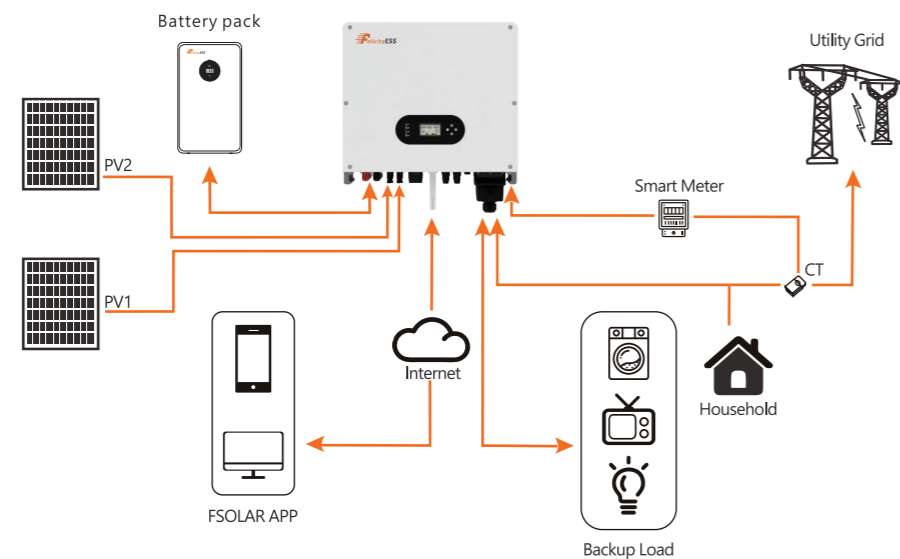


Realize remote monitoring and scheduling



Ip65 protection grade

### Connection diagram



Model	T-REX-4K6LP1G01	T-REX-5KLP1G01
<b>Battery Input Data</b>		
Battery Voltage Range	40V~60V	
Max. charging and discharging current	100A/100A	
Max. charging and discharging power	4600W	5000W
Battery type	Li-Ion /Lead-acid	
<b>DC Input Data(PV side)</b>		
Max.recommended PV power	6000W	6500W
Max.PV voltage	550V	
Start voltage	130V	
PV voltage range	90V-550V	
MPPT voltage range	100V-500V	
MPPT Voltage Range for Full Load	200V-500V	220V-500V
Nominal voltage	360V	
Max.input current	15A/15A	
Max. shorted current	18A/18A	
Number of MPP trackers / strings per MPP tracker	2/1	
<b>Grid Data</b>		
Nominal Input Voltage	230Vac	
Input Voltage Range	184-264.5Vac*	
Nominal grid frequency	50/60Hz	
Max. input current	40A	
Max. Charge Current	100A	
Max. AC output power	4600W	5000W
AC Output Rated Current	20A	21.7A
Max. Output current	25A	25A
Max. Continuous AC Passthrough	30A	
Power Factor	>0.99	
Displacement power factor	0.8leading...0.8lagging	
THDI	< 3%	
<b>AC Output Data(Back Up)</b>		
Rated output power	4600VA/4600W	5000VA/5000W
Max. Output current	30A	
Rated AC output voltage	230Vac	
Rated AC output frequency	50/60Hz	
<b>Efficiency</b>		
Max. efficiency	97.6%	
Euro efficiency	97.0%	
MPPT efficiency	99.9%	
<b>Protection</b>		
Output over current protection	Integrated	
Output over power protection	Integrated	
Output shorted protection	Integrated	
Anti-islanding protection	Integrated	
GFCI Protection	Integrated	
Insulation Resistor Detection	Integrated	
<b>General Data</b>		
Operating temperature range	-25°C~60°C,>45°C Derating	
Protection degree	IP65	
Relative humidity	100%	
Cooling concept	Nature	
Altitude	2000m	
Communication	RS232/RS485	
BMS Communication	CAN/RS485	
Monitor module	WiFi/GPRS	
Display	LCD+LED	
Installation Style	Wall-mounted	
Warranty[1]	10 years	
Grid Regulation	VDE-AR-N 4105; G99/1; EN50549-1; CEI -21; AS 4777.2; NRS 097-2-1;	
Safety Regulation	IEC 62109-1/2IEC 62040-1	
EMC	EN61000-6-1.EN61000-6-3	
Net Weight(KG)	32.4KG	
Gross Weight(KG)	39.1KG	
Product Dimension(MM)	530*493*228MM	
Package Dimension(MM)	632*570*315MM	

[1]Conditions apply, refer to FelicityESS Warranty Letter.

\*According to local grid-connected standards

# T-REX Hybrid Inverter

T-REX-10KLP3G01



## Specification



## Product Features



Multi-way MPPT design



Lithium battery activation function



UPS grade on/off grid switching



Support half-wave load, and unbalanced load

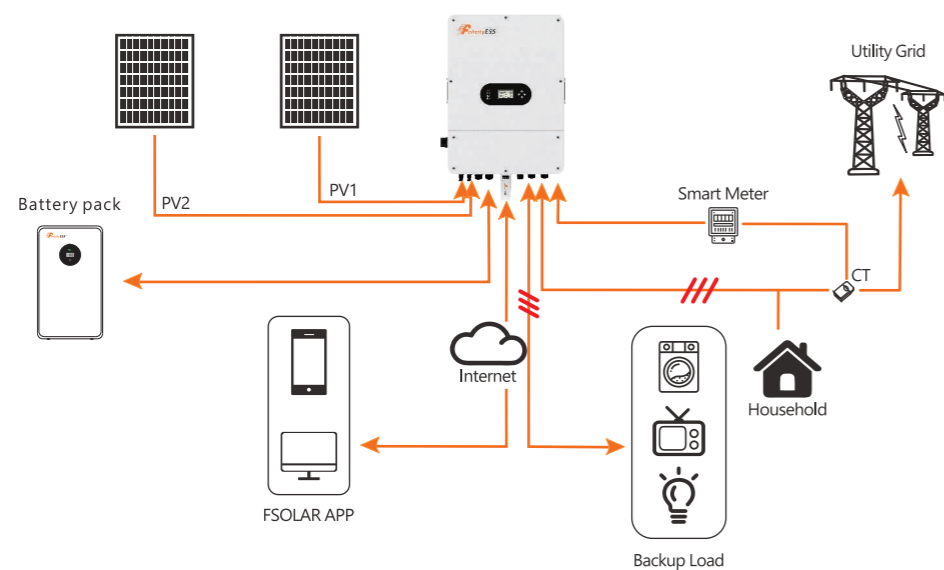


Equipped with remote real-time monitoring platform



Ip65 protection grade

## Connection diagram



Model	T-REX-10KLP3G01
<b>Battery Input Data</b>	
Battery Voltage Range	40V~60V
Max. charging and discharging current	200A/200A
Max. charging and discharging power	10000W
Battery type	Li-Ion /Lead-acid
<b>DC Input Data(PV side)</b>	
Max.recommended PV power	13000W
Max.PV voltage	900V
Start voltage	180V
PV voltage range	160V-900V
MPPT voltage range	200V-850V
MPPT Voltage Range for Full Load	450V-850V
Nominal voltage	720V
Max.input current	15A/15A
Max. shorted current	18A/18A
Number of MPP trackers / strings per MPP tracker	2/1
<b>Grid Data</b>	
Nominal Input Voltage	L1/L2/L3/N/PE, 230/400Vac
Input Voltage Range	184-264.5Vac*
Nominal grid frequency	50/60Hz
Max. input current	30A
Max. Charge Current	200A
Max. AC output power	10000W
AC Output Rated Current	14.5A
Max. Output current	18A
Max. Continuous AC Passthrough	30A
Power Factor	>0.99
Displacement power factor	0.8leading...0.8lagging
THDI	< 3%
<b>AC Output Data(Back Up)</b>	
Rated output power	10000VA/10000W
Max. Output current	30A
Rated AC output voltage	L1/L2/L3/N/PE, 230/400Vac
Rated AC output frequency	50/60Hz
<b>Efficiency</b>	
Max. efficiency	97.6%
Euro efficiency	97.0%
MPPT efficiency	99.9%
<b>Protection</b>	
Output over current protection	Integrated
Output over power protection	Integrated
Output shorted protection	Integrated
Anti-islanding protection	Integrated
GFCI Protection	Integrated
Insulation Resistor Detection	Integrated
<b>General Data</b>	
Operating temperature range	-25°C~60°C,>45°C Derating
Protection degree	IP65
Relative humidity	100%
Cooling concept	Smart cooling
Altitude	2000m
Communication	RS232/RS485
BMS Communication	CAN/RS485
Monitor module	WiFi/GPRS
Display	LCD+LED
Installation Style	Wall-mounted
Warranty[1]	10 years
Grid Regulation	VDE-AR-N 4105; G99/1; EN50549-1; CEI -21; AS 4777.2; NRS 097-2-1;
Safety Regulation	IEC 62109-1/2IEC 62040-1
EMC	EN61000-6-1.EN61000-6-3
Net Weight(KG)	38.9KG
Gross Weight(KG)	47.1KG
Product Dimension(MM)	655*475*266MM
Package Dimension(MM)	792*597*351MM

[1]Conditions apply, refer to FelicityESS Warranty Letter.

\*According to local grid-connected standards



# T-REX Hybrid Inverter

T-REX-10KHP3G01



## Specification



### Product Features



WiFi for mobile monitoring



Max. charging/discharging current of 25A



AC couple to retrofit existing solar system

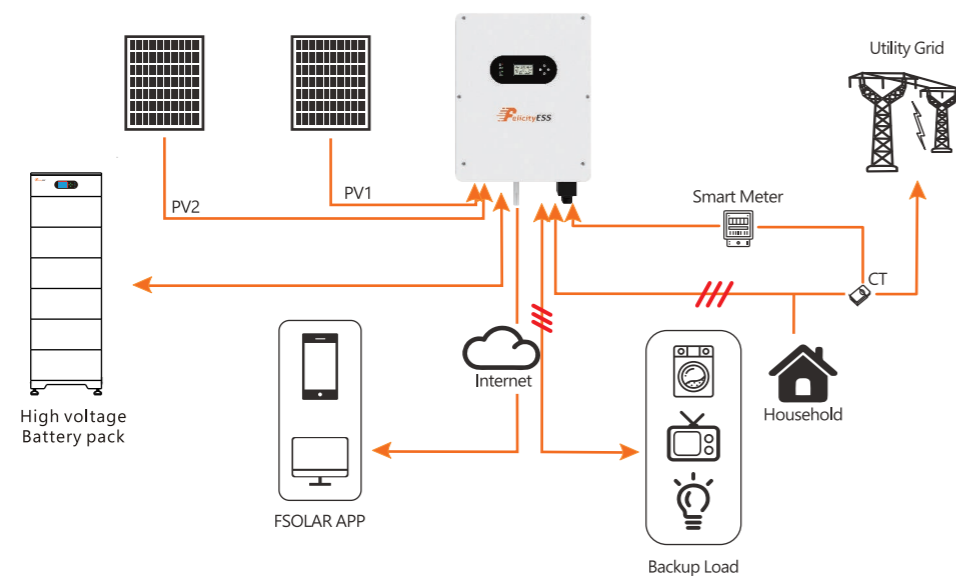


Support storing energy from diesel generator



Automatically switching time within 20ms

### Connection diagram



Model	T-REX-10KHP3G01
<b>Battery Input Data</b>	
Battery Voltage Range	180V~580V
Max. charging and discharging current	25A
Max. charging and discharging power	10000W
Battery type	Li-Ion /Lead-acid
<b>DC Input Data(PV side)</b>	
Max.recommended PV power	13000W
Max.PV voltage	900V
Start voltage	160V
PV voltage range	160V-900V
MPPT voltage range	200V-850V
MPPT Voltage Range for Full Load	450V-850V
Nominal voltage	720V
Max.input current	15A/15A
Max. shorted current	18A/18A
Number of MPP trackers / strings per MPP tracker	2/1
<b>Grid Data</b>	
Nominal Input Voltage	L1/L2/L3/N/PE, 230/400Vac
Input Voltage Range	184-264.5Vac*
Nominal grid frequency	50/60Hz
Max. input current	30A
Max. Charge Current	25A
Max. AC output power	10000W
AC Output Rated Current	14.5A
Max. Output current	18A
Max. Continuous AC Passthrough	30A
Power Factor	>0.99
Displacement power factor	0.8leading...0.8lagging
THDI	< 3%
<b>AC Output Data(Back Up)</b>	
Rated output power	10000VA/10000W
Max. Output current	30A
Rated AC output voltage	L1/L2/L3/N/PE, 230/400Vac
Rated AC output frequency	50/60Hz
<b>Efficiency</b>	
Max. efficiency	97.6%
Euro efficiency	97.0%
MPPT efficiency	99.9%
<b>Protection</b>	
Output over current protection	Integrated
Output over power protection	Integrated
Output shorted protection	Integrated
Anti-islanding protection	Integrated
GFCI Protection	Integrated
Insulation Resistor Detection	Integrated
<b>General Data</b>	
Operating temperature range	-25°C~60°C,>45°C Derating
Protection degree	IP65
Relative humidity	100%
Cooling concept	Nature
Altitude	2000m
Communication	RS232/RS485
BMS Communication	CAN/RS485
Monitor module	WiFi/GPRS
Display	LCD+LED
Installation Style	Wall-mounted
Warranty[1]	10 years
Grid Regulation	VDE-AR-N 4105; G99/1; EN50549-1; CEI -21; AS 4777.2; NRS 097-2-1;
Safety Regulation	IEC 62109-1/2IEC 62040-1
EMC	EN61000-6-1.EN61000-6-3
Net Weight(KG)	35.3KG
Gross Weight(KG)	39.7KG
Product Dimension(MM)	533*431*213MM
Package Dimension(MM)	635*533*315MM

[1]Conditions apply, refer to FelicityESS Warranty Letter.

\*According to local grid-connected standards

# T-REX Hybrid Inverter

T-REX-50KHP3G01



## Specification



### Product Features



3.5-inch LCD touch screen



Smart Cloud Monitoring System



2 independent battery inputs



Programmable generator port



Support multi Working mode

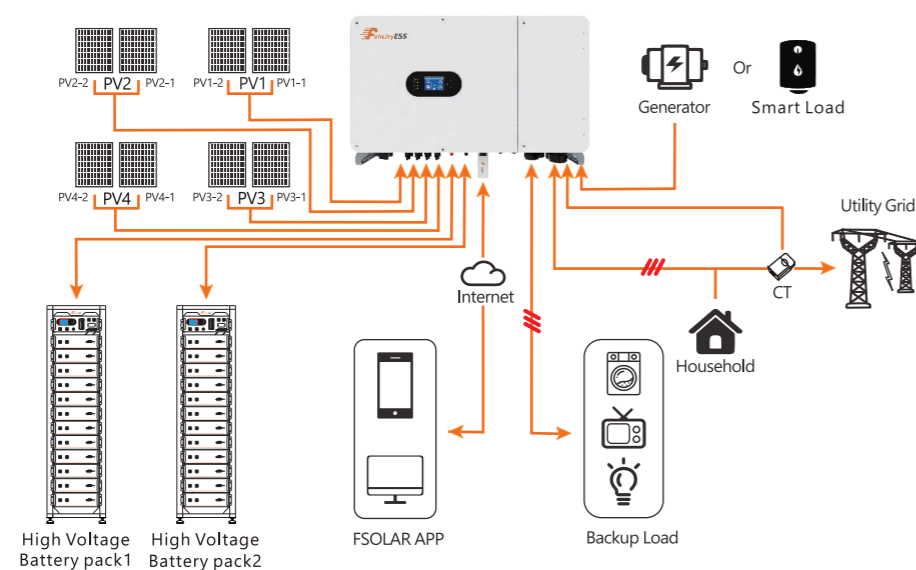


The maximum support is 12 parallel machines.



Ip65 protection grade

### Connection diagram



Model	T-REX-50KHP3G01
<b>Battery Input Data</b>	
Battery Type	LFP (LiFePO4)
Battery Voltage Range	160~800Vd.c.
Max. Charging Current	50+50(A)
Max. Discharging Current	50+50(A)
Number of battery input	2
<b>PV String Input Data</b>	
Max. DC Input Power	65 kW
Max. DC Input Voltage	1000Vd.c.
Min. DC Input Voltage	150Vd.c.
Start-up Voltage	250Vd.c.
Rated DC Input Voltage	600Vd.c.
MPPT Range	200~850Vd.c.
Full Load DC Voltage Range	450~850Vd.c.
PV Input Current	36+36+36+36(A)
Max. PV Isc	55+55+55+55(A)
No.of MPP Trackers	4
No.of Strings per MPP Tracker	2
<b>AC Output Data</b>	
Rated AC Output Power	50 kW
Max. AC Output Power	55 kW
AC Output Rated Current	72.5 A
Max. AC Current	79.7 A
Rated AC Voltage	220/380,230/400 Vac (-20%~+15%)
AC Wiring Mode	3W+N+PE/3W+PE
Rated AC Frequency	50 /60 Hz (45~55Hz/55~65Hz)
THDI	<3% (At Rated Power)
Power Factor	0.8(leading) to 0.8(lagging)
<b>Efficiency</b>	
Max. efficiency	97.6%
Euro efficiency	97.0%
MPPT efficiency	99.9%
<b>Protection</b>	
PV Input Lightning Protection, PV String Input Reverse Polarity Protection, Battery Input Lightning Protection, Battery Input Reverse Polarity Protection, Insulation Resistor Detection, Residual Current Monitoring Unit, Output Over Current Protection, Output Shorted Protection, Output Over Voltage Protection, Anti-islanding Protection, AC Output Lightning Protection.	Integrated
<b>Certification and Standards</b>	
Grid Regulation	NRS 097-2-1,VDE4105,EN50549-1,AS 4777.2,GB/T 34120,GB/T 34133,GB/T 34129
Safety EMC / Standard	IEC/EN 61000-6-1/2/3/4,IEC/EN 62109-1,IEC/EN 62109-2
<b>General Data</b>	
Protection Degree	IP65
Operating Temperature Range	-25 to 60 °C (> 50 °C derating)
Humidity	0 ~ 95 % (No condensation)
Cooling	Smart cooling
Altitude	3000 m (> 2000 m derating)
Communication with BMS	RS485,CAN
Monitor module	WiFi/GPRS
Installation Style	Wall-mounted
Warranty[1]	10 years
Net Weight(KG)	85.6KG
Gross Weight(KG)	98.4KG
Product Dimension(MM)	940*340*582MM
Package Dimension(MM)	463*770*1110MM

[1]Conditions apply, refer to FelicityESS Warranty Letter.

\*According to local grid-connected standards

# X - RAY

Series

# X-RAY Micro Inverter

X-RAY-WVC800W



## Specification



## Product Features



The maximum output power can reach 800W



Peak efficiency 92.70%.  
The CEC weighted efficiency is 92.50%



Static MPPT efficiency 99.80%. The efficiency of dynamic MPPT on cloudy days is 99.76%



Power factor (adjustable)  
0.8 lead...0.8 lag



External antenna for stronger communication with WiFi sources



High reliability: NEMA 3R (IP65) enclosure. 6000V surge protection

Model	X-RAY-WVC800W
<b>DC Input</b>	
Maximum Input Power	Max 2x 500W
Mppt Voltage Range (Module Open Circuit Voltage)	30-60V
Starting Voltage	22V d.c.
Working Voltage Range	22-60V d.c.
Maximum Input Voltage	60V
Maximum Input Current	2x18A
Maximum Input Short Circuit Current	2x20A
Maximum Feedback Current Of The Array	0A
<b>AC Output</b>	
Maximum Output Power	800VA
Rated Output Current	@120V 6.6A @230V 3.5A
Nominal Output Voltage Range	@120V a.c. (Application area: such as Japan, North America, etc.) @230V a.c. (Application area: such as Europe)
Nominal Frequency Range	50Hz/60Hz
Power Factor	> 0.99 default 0.95 leading...0.95 lagging
Harmonic Distortion Of Output Current	<3%
Maximum Number Of Connections Per Branch	@120V 6 PCs @230V 12Pcs
<b>Efficiency, Safety and Protection</b>	
Peak Microinverter Efficiency	92.70%
CEC weighted efficiency	92.50%
Nominal MPPT Efficiency	99.80%
Night power consumption (mW)	0
<b>Mechanical Data</b>	
Ambient temperature range	-20 to +50°C
Storage temperature range	-20 to +50°C
Dimensions (LxWxH)	283x200x41.6mm
Weight	1.46kg
Waterproof level	Outdoor Nema 3r (IP65)
Cooling method	Natural Convection (no Fans)
Degree of pollution	PD3
<b>Feature</b>	
Power Delivery Mode	Reverse transmission, load priority
Communication method	WiFi
Rated transmit power	802.11b: +17dBm ± 1.5dBm (@11Mbps) 802.11g: +15dBm ± 1.5dBm (@54Mbps) 802.11n: +14dBm ± 1.5dBm (@HT20, MCS7)
Surveillance system	Smart Life
Warranty	5 years
Electrical Standard	EN 50549-1:2019, EN 50549-2:2019 EN 61000-6-1:2007, EN 61000-6-3:2007 + A1:2011 + AC2012 IEC/EN 62109-1:2010, IEC/EN 62109-2:2011
Bluetooth	2402-2480MHz Bluetooth EIRP Power (Max.) 7.89dBm
Wifi 2.4G	2412-2472MHz Wifi 2.4G EIRP Power (Max.) 18.08dBm
*Note: Voltage and frequency ranges may exceed nominal values if required by the utility company.	
<b>Package</b>	
	FCL (5units)
Standard 3m AC grid-connected cable	12.3Kg 450x400x260mm