

**Fullwatt**<sup>®</sup>

Ningbo Fullwatt New Energy Technology Co., Ltd  
No. 716 Yanhu Road, Yinzhou District, Ningbo China  
Tel: 0574-8302 8314  
E-mail: sales01@fullwattpower.com  
Website: www.fullwattpower.com

© All Rights Reserved.



**Fullwatt**<sup>®</sup>

## RESIDENTIAL GREEN ENERGY STORAGE SYSTEM PROVIDER

Product Catalog

© All Rights Reserved.



# Fullwatt®

FULLWATT is a high-tech corporation that specializes in the R&D, design, manufacture and service of Solar energy application, energy storage systems, charging & discharging systems, and future technology fields.

We are committed to becoming an overall solution supplier in the fields of residential green energy system and continuously focus on the application and innovation of future technologies, aiming to build a global localized service network and continue to create value for customers.



# CONTENT

## System

- Roof Energy Storage System 03-04
- Balcony Solar Energy System 05-06
- Outdoor Energy Storage System 07-08



## Product

- Photovoltaic Module 09-12
- Balcony Bracket 13-14
- Hybrid Inverter 15-18
- Off Grid Inverter 19-22
- Battery Pack 23-26
- All-in-one Machine 27-30
- Micro Inverter 31-34
- Balcony Battery 35-36
- Folding PV Modules 37-38
- Outdoor Power 39-42
- Accessories 43-44





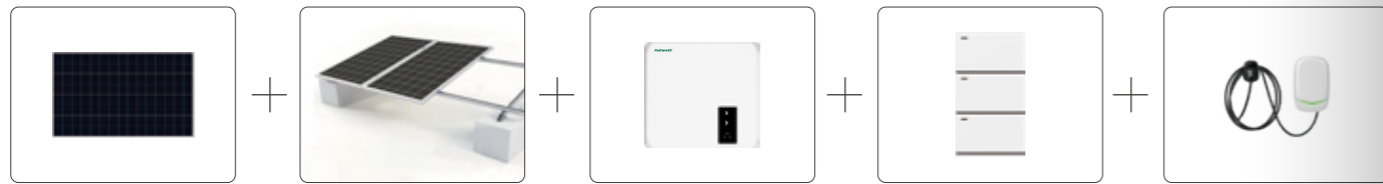
# SOLAR SYSTEM





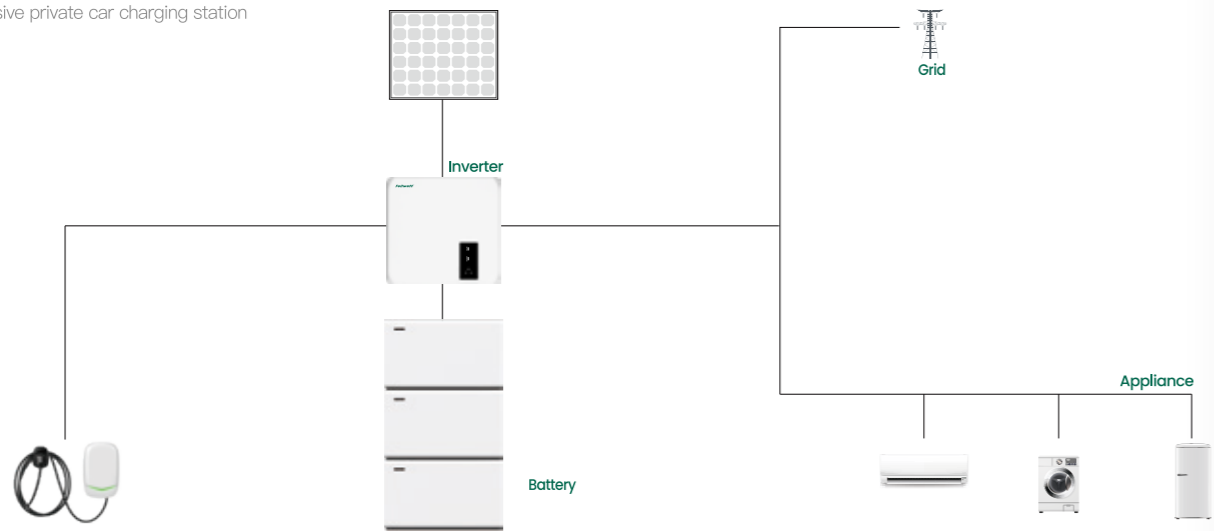
# Roof Energy Storage System

## F-RESS



### Whole-house intelligent power supply system

Encounters power outage and requires whole-house power supply  
Home UPS automatically switches power supply  
Exclusive private car charging station



# Roof Energy Storage System

National **Germany**

Roof Energy Storage System	F-RESS-3K	F-RESS-5K	F-RESS-8K	F-RESS-10K
<b>Solar System Power</b>	3000W	5000W	8000W	10000W
<b>Configuration</b>				
Photovoltaic Peak Power	550W*6	550W*12	550W*18	550W*22
Inverter Peak Power	5.5kW	7.5kW	12kW	15kW
Number of Battery Packs	5.12kWh	5.12kWh*2	5.12kWh*4	5.12kWh*5
Bracket	AL6063-T5 (Anodizing)			
Power generation / Day	11.55 kWh	19.25 kWh	30.8 kWh	38.5 kWh
Roof Area	>25 m <sup>2</sup>	>50 m <sup>2</sup>	>80 m <sup>2</sup>	>100 m <sup>2</sup>
<b>Parameter Information</b>				
<b>Photovoltaic Modules</b>				
Maximum Power Voltage (V)	42.13			
Maximum Power Current (A)	13.06			
Open Circuit Voltage (V)	50.1±3%			
Short Circuit Current (A)	13.9±3%			
Module Efficiency (%)	21.28			
Pmax Temperature Coefficients (W/°C)	-0.350%			
Operating and Storage Temperature (°C)	-40°C~+85°C			
Cell (Quality/Type/Dimensions)	182*91 mono			
Junction Box (Protection Degree)	IP67/IP68			
Dimensions (L/W/H)	2279*1134*35mm			
20FT Container	10 Packages / 275 PCS			
40HQ Container	22 Packages / 620 PCS			
<b>Energy Storage System</b>				
<b>DC Input</b>				
Max. PV Input Power [W]	5500	7500	12000	15000
Max. PV Input Voltage [V]	550		1000	
Max. PV Input Current [A]	16		13	
MPPT Voltage Range [V]	40-530		18-850	
No. of MPPT Trackers	2			
No. of Input Strings per Tracker	1/1			
<b>AC Input</b>				
Rated AC Input Power [W]	6000		16000	
Max. AC Input Power [VA]	6000		17600	
Rated AC Voltage [V]	AC230		3W+N+PE,220/380V;230/400V;240/415V	
Grid Frequency/ Range [Hz]	50/60			
<b>AC Output</b>				
Rated Grid Output Voltage [V]	230		3W+N+PE,220/380V;230/400V;240/415V	
Rated Output Frequency [Hz]	50/60			
Rated Output Power [W]	3000	5000	8000	10000
Rate Output Current [A]	13.1	21.7	11.6	14.5
THD	<3%			
<b>Battery Data</b>				
Battery Type	LiFePO <sub>4</sub>			
Battery Voltage Range [V]	40-60		150-600	
Max. Charging/Discharging Current [A]	100A/100A		50A/50A	
Communication Interface	RS485/CAN			
<b>General Information</b>				
Max. Efficiency	97.6%		97.90%	
Ingress Protection Rating	IP65			
Dimensions (L/W/H)	494*4208195		530*200*560	
Weight	21.5		30	
<b>Accessories</b>				
EV Charger	32A 7.4kW (Optional)			
Brackets	Flat roof / Slanted roof / Concrete flat roof / Coloured steel tile roof / Glazed tile roof / Sun Room (Optional)			



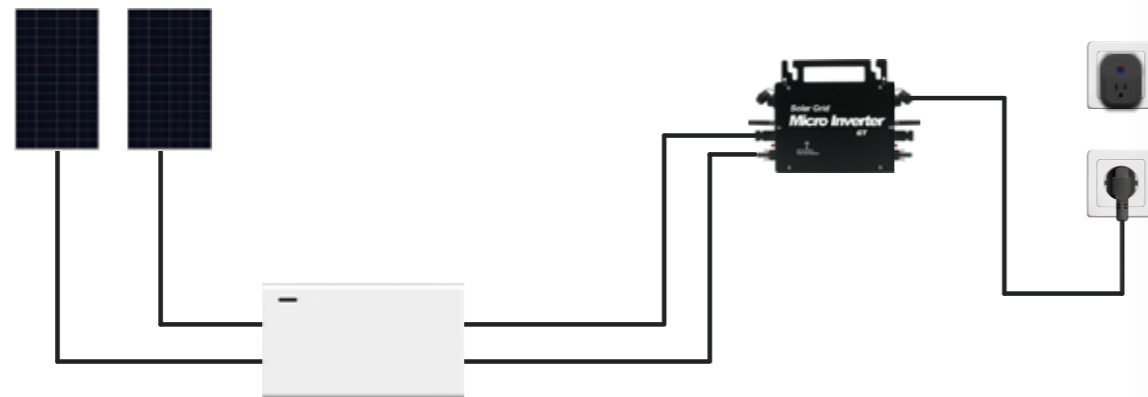
# Balcony Solar Energy System

## F-BSES



### Balcony Solar energy system

Wall-mounted building integration, saving space  
 Photoelectric automatic complementation, saving electricity costs  
 Durable, component lifespan up to 25 years



# Balcony Solar Energy System

National **Germany**

Balcony Solar Energy System	F-BSES-3	F-BSES-4	F-BSES-6	F-BSES-8
<b>Solar Energy System</b>	300W	400W	600W	800W
<b>Configuration</b>				
Photovoltaic Peak Power	300W*1	410W*1	300W*2	410W*2
Micro Inverter Peak Power	300W*1	400W*1	600W*1	800W*1
Battery Pack	1.92kWh			
Micro inverter and plug connection cable	2 Meter * 1 pcs			
Bracket	Hanging Type			
Power generation / Day	1155 Wh	1540 Wh	2310 Wh	3080 Wh
Balcony length	>2.0 m	>2.5 m	>3.5 m	>4.5 m
<b>Parameter Information</b>				
<b>Photovoltaic Modules</b>				
Maximum Power Voltage (V)	33.93	31.46	33.93	31.46
Maximum Power Current (A)	8.85	13.04	8.85	13.04
Open Circuit Voltage (V)	39.87	37.45±3%	39.87	37.45±3%
Short Circuit Current (A)	9.36	13.86±3%	9.36	13.86±3%
Module Efficiency (%)	20.66	20.99	20.66	20.99
Pmax Temperature Coefficients (W/°C)	-0.350%			
Maximum Series Fuse Rating (A)	20	25	20	25
Power Tolerance	0~+3%			
Operating and Storage Temperature (°C)	-40°C~+85°C			
Front Cover (Materials/Thickness)	Low-iron tempered glass/3.2mm			
Cell (Quality/Type/Dimensions)	210*105mono	182*91mono	210*105mono	182*91mono
Junction Box (Protection Degree)	IP65/IP67	IP67/IP68	IP65/IP67	IP67/IP68
Cable(Length/Cross-sectional Area)	4mm <sup>2</sup> cable 90cm+mc4	4mm <sup>2</sup> cable 30cm+mc4	4mm <sup>2</sup> cable 90cm+mc4	4mm <sup>2</sup> cable 30cm+mc4
Dimensions (L/W/H)	1650*880*35	1722*1134*35	1650*880*35	1722*1134*35
<b>Micro Inverter</b>				
<b>DC Input</b>				
Max.Input Power [W]	300	400	600	800
Max.Input Current [A]	12	16	12*2	16*2
Max.Input Voltage [V]	50			
Operating Voltage Range [V]	20~50			
MTTP Tracking Range [V]	16~68		22~48	
<b>AC Output</b>				
Nominal Output Voltage [V]	120/230			
Nominal Output Current [A]	2.5/1.3	3.3/1.7	5/2.6	6.6/3.4
Nominal Output Voltage Range [V]	80~160/180~270			
<b>Efficiency</b>				
Peak Efficiency	95%			
Night Power Consumption [W]	<1			
<b>General Information</b>				
Protection Degree	IP66			
Operating Ambient Temperature Range[°C]	-40~+65			
Storage Temperature Range [°C]	-40~+85			
Weight [KG]	1.6		2	
Dimensions(W*H*D) [mm]	240*185*45		310*185*45	
Max.AC Bus Cable Current [A]	20			
<b>Battery Pack</b>				
Battery Type	LiFePO <sub>4</sub>			
Capacity [kWh]	1.92			
Nominal Voltage [V]	38.4			
Ingress Protection Rating	IP65			
Dimensions [mm]	700*180*450			
Weight [kg]	35			
<b>Accessories</b>				
Bracket	Adjustable Angle (Optional)			
Box	Control box (Optional)			
connection cable	3 Meter or 5 Meter (Optional)			



# Outdoor Energy Storage System

## F-OESS



### Set 1



### Set 2



### Outdoor Energy Storage System

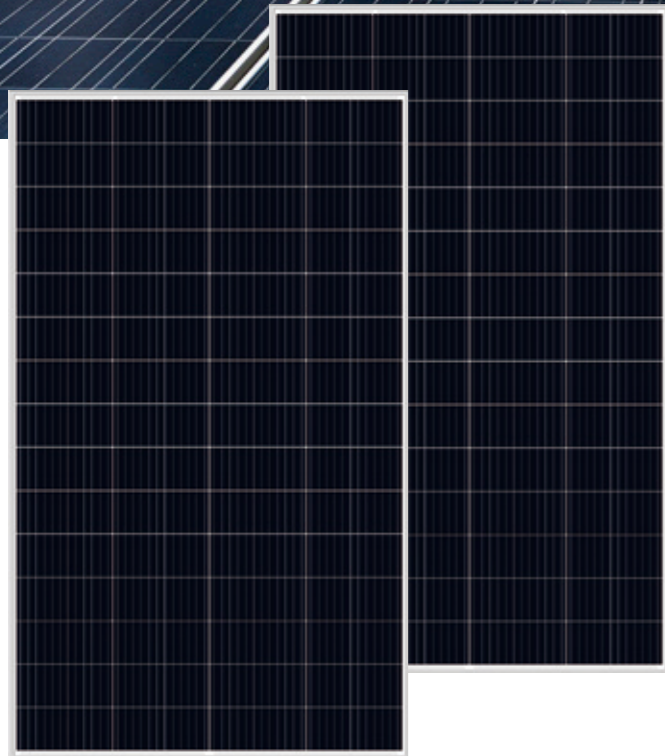
Outdoor camping  
Meet the needs of equipment power supply  
Portable and practical

# Outdoor Energy Storage System





Outdoor Energy Storage System	F-OESS-2		F-OESS-4	
Solar Energy System	2 Folds		4 Folds	
<b>Configuration</b>				
Folding Photovoltaic Panel [W]	100		200	
Outdoor Power [W]	500		1000	
<b>Parameter Information</b>				
<b>Folding Photovoltaic Panel</b>				
Peak Power (STC) [W]	100	75	200	165
Maximum Power Voltage [V]	18.44	20.38	19.6	44.01
Maximum Power Current [A]	5.42	4.61	10.21	4.64
Open-circuit voltage [V]	21.45	17.26	22.82	37.66
Short-circuit current [A]	5.75	4.34	10.75	4.38
Maximum System Voltage [V]	1000			
Unfold size [mm]	1254*516.5*25		2266*537*25	
Folded size [mm]	516.5*607*45		537*607*55	
Weight [kg]	4.77		8.96	
Cell Technology	ETFE		ETFE	
Certifications	CE, ROHS			
<b>Outdoor Power</b>				
<b>AC Input</b>				
Rated Output Power [W]	500		1000	
Peak Power [W]	1000		2000	
<b>DC Input</b>				
Max.Solar Input Power [W]	100		200	
Max.Car Port Input Power [W]	60			
Max.Car Port Input Power [V]	12			
<b>Battery</b>				
Battery Type	18650 NCM Lithium-ion Battery			
Capacity [Wh]	400		933	
Rated Voltage [v]	22.2			
Rated Current [A]	18		42	
<b>General Information</b>				
Charging Temperature [°C]	0~40°C			
Operating Temperature [°C]	-10~40°C			
Product Size(L*W*H) [mm]	230*168*178		290*201*200	
Weight [kg]	4.3		8.6	
Certificate	TUV-CE;RoHS			
Protections	Overcharging, Over Voltage,Low Voltage, Over Current , Low Temperature, Over Temperature,Low Battery Alarm, Short Circuit,Overload			



# Photovoltaic Module F-PV201

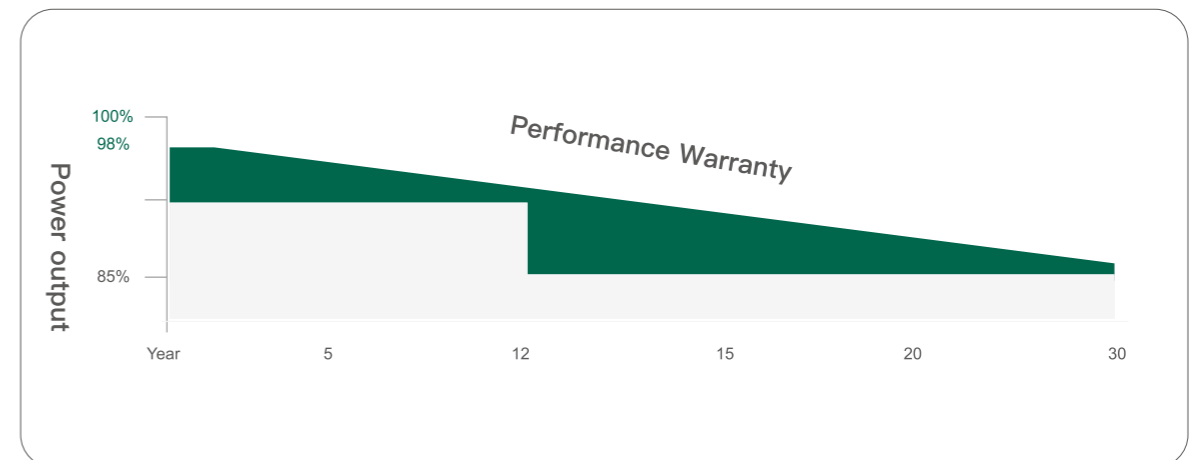


## Features

-  Outstanding mechanical load resistance  
2400 Pa wind load, 5400 Pa snow load
-  Anti-PID (potential induced degradation)  
Passed anti-PID test under 85% damp heat  
85% relative humidity for 96 hours
-  Great Durability against extreme conditions  
Passed salt mist corrosion test, ammonia corrosion test  
dust & sand test, fire test, all certified by TÜV
-  Double electroluminescence (EL) tests  
Carefully inspected before and after lamination  
to guarantee fault-free modules

## Technical Data

Model	F-PV201-300	F-PV201-410		F-PV201-550	
<b>Electrical Performance</b>					
Dimensions (L/W/H)	1650*880*35	1722*1134*35		2279*1134*35	
	STC	STC	NOCT	STC	NOCT
Peak Power at STC (W)	300	410	304.8	550	405.1
Maximum Power Voltage (V)	33.93	31.46	29.2	41.93	38.93
Maximum Power Current (A)	8.85	13.04	10.44	13.00	10.43
Open Circuit Voltage (V)	39.87	37.45±3%	35.05±3%	49.9±3%	46.73
Short Circuit Current (A)	9.36	13.85±3%	11.16±3%	13.82±3%	11.13±3%
Module Efficiency (%)	20.66	20.99		21.05	
<b>Thermal Characteristics &amp; Operating Conditions</b>					
Maximum System Voltage	1000 V	1500/1000 V		1500V	
Maximum Series Fuse Rating (A)	20	25			
Power Tolerance	0~+3%				
Pmax Temperature Coefficients (W/°C)	-0.350%	-0.350%		-0.400%	
Voc Temperature Coefficients (V/°C)	-0.270%	-0.285%		-0.290%	
Isc Temperature Coefficients (A/°C)	0.048%	0.045%		0.040%	
NOCT Nominal Operating Cell Temperature(°C)	45±2				
Operating and Storage Temperature (°C)	-40°C~+85°C				
<b>Construction Materials</b>					
Front Cover (Materials/Thickness)	Low-iron tempered glass/3.2mm				
Cell (Quality/Type/Dimensions)	210*105 mono	182*91 mono		182*91 mono	
No. of Cells	68 (4*17)	108 (12*9)		144 (6*12)*2	
Frame (Material)	Anodized Aluminium Alloy			Anodized Aluminium Alloy	
Junction Box (Protection Degree)	IP65/IP67	IP67/IP68		IP67/IP68	
Cable (Length/Cross-sectional Area)	4 mm <sup>2</sup> cable 90cm+mc4	4 mm <sup>2</sup> cable 30cm+mc4		4 mm <sup>2</sup> cable 30cm+mc4	
<b>Packing Specifications</b>					
20FT Container	6 Packages/360 PCS	6 Packages/ 324 PCS		10 Packages/ 275 PCS	
40HQ Container	12 Packages/ 816 PCS	26 Packages/ 806 PCS		22 Packages/ 620 PCS	








Photovoltaic Module  
F-FP101



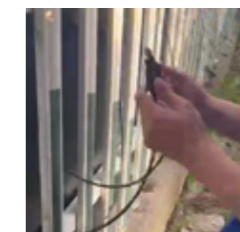
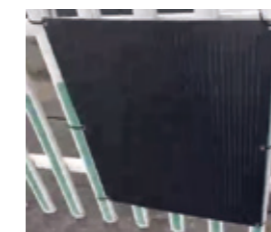
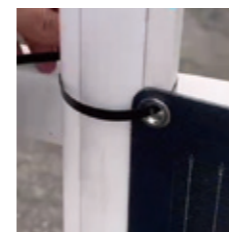
## Features

-  Better Light Penetration
-  Extremely Flexible
-  Easy Installation
-  Super Thin Lamination

## Technical Data

Model	F-FP101-110
Dimensions (L/W/H)	730*845*2.5mm
Peak Power at STC (W)	110
Maximum Power Voltage (V)	10.06
Maximum Power Current (A)	10.94
Open Circuit Voltage (V)	11.76
Short Circuit Current (A)	11.76
Module Efficiency(%)	17.83
Thermal Characteristics & Operating Conditions	
Maximum System Voltage(V)	1000
Maximum System Voltage(V)	15
Power Tolerance	0~+3%
Pmax Temperature Coefficients(W/°C)	-0.350%
Voc Temperature Coefficients(V/°C)	-0.270%
Isc Temperature Coefficients(A/°C)	+0.048%
NOCT Nominal Operating Cell Temperature(°C)	45±2
Operating and Storage Temperature(°C)	-40~+85
Mechanical Characteristics	
Cell Type	166*83Mono
No. of Cells	36(4x9)
Dimensions	730*845*2.5mm
N.W.	2.3kg
Junction box	IP67
Output cables	4mm <sup>2</sup> cable 90cm+mc4
MaxWind Load/Snow Load	2400Pa/5400Pa
Certifications	CE RoHS
Packing Specifications	
20FT	243set
40HQ	603sets

## Installations Step



1、 Connect the photovoltaic panel to the railing with a tie

2、 6 tie straps for one photovoltaic panel

3、 Connecting photovoltaic modules




4、 Connecting inverter



# Balcony Bracket F-BR101



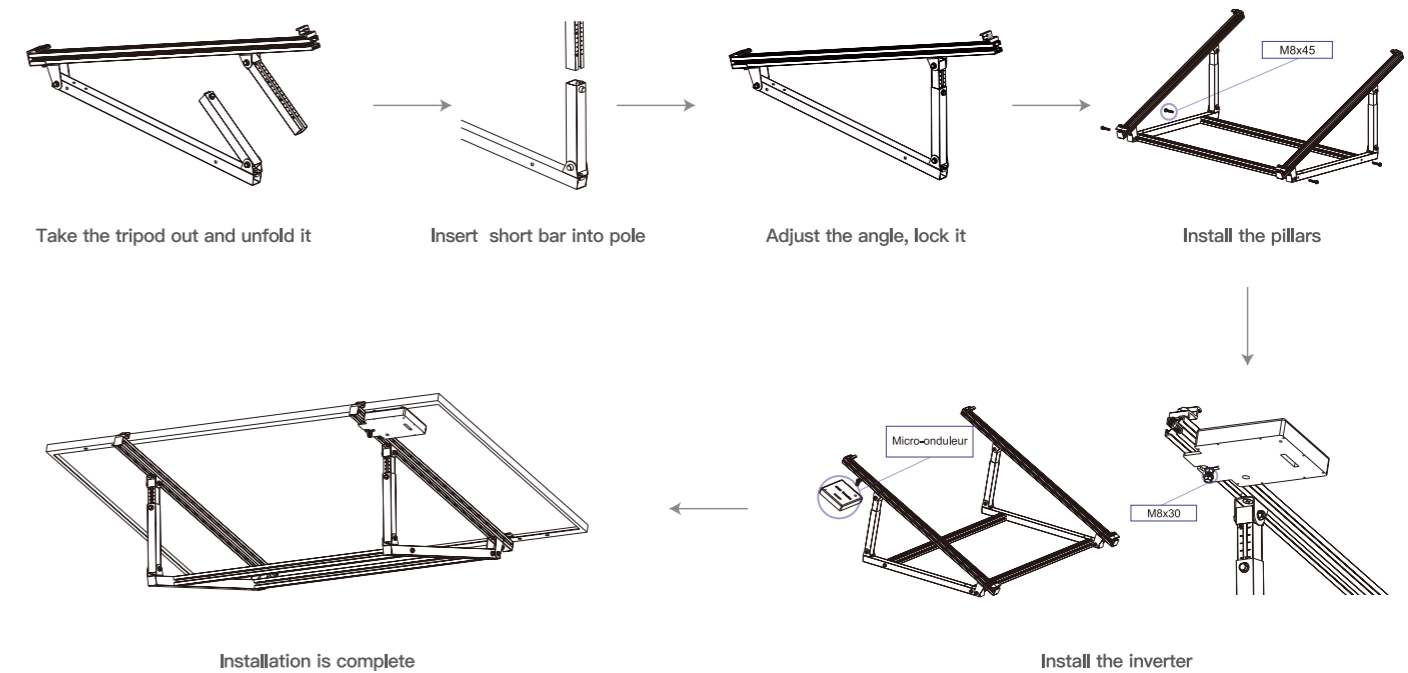
## Features

-  Adjustable angle
-  CE+TUV testing report
-  Suitable for all scenarios

## Technical Data

Specification	F-BR101
Module L	≤2200mm T=30/35mm
Module W	A≤1180mm
Adjustable angle	20-35°
Material	Aluminum
Balcony default solution	Includes hook rubber mat (affixed) Cover rubber pad (individually packaged) End cap included (individually packaged)
Packing details	
Dimensions	1280*330*70mm
Weight	GW:9kg/ set
Package Parameter	75 sets/pallet, 675 sets/20GP 90 sets/pallet, 1710 sets/40HQ

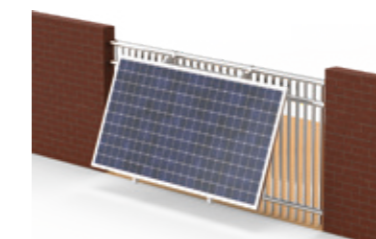
## Installation Instruction



## Usage Scenario



Courtyard



Balcony



Wall



# Hybrid Inverter

## F-IVT101

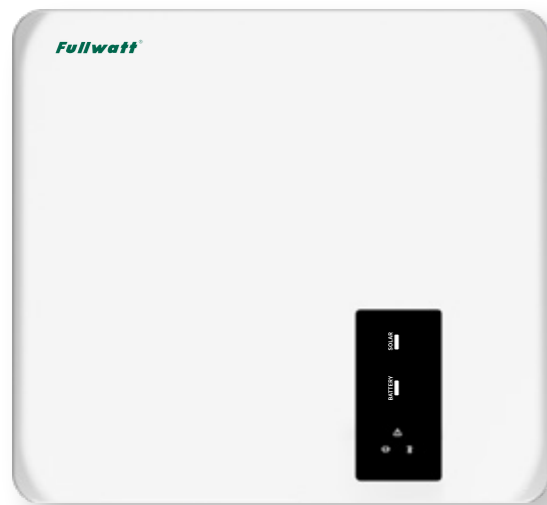
Single Phase, Low Voltage








## Technical Data

Model	F-IVT101-3	F-IVT101-4	F-IVT101-5	F-IVT101-6
<b>DC Input</b>				
Max. PV Input Power [W]	5500	6500	7500	9000
Max. PV Input Voltage [V]	550			
Max. PV Input Current [A]	16			
Max. Short-circuit Current per MPPT [A]	20			
MPPT Voltage Range [V]	40-530			
No. of MPPT Trackers	2			
No. of Input Strings per Tracker	1/1			
Back-feed Current [A]	0			
<b>AC Input</b>				
Rated AC Input Power [VA]	6000			
Max. AC Input Power [VA]	6000			
Rated AC Voltage [V]	AC230			
Grid Frequency Range [Hz]	50/60			
<b>AC Output</b>				
Rated Grid Output Voltage [V]	230			
Rated Output Frequency [Hz]	50/60			
Rated Output Power [W]	3000	4000	5000	6000
Max. Apprent Power [W]	3000	4000	5000	6000
Max. Output Current [A]	13.1	17.4	21.7	26.1
Max. Current per Phase [A]	13.6	18.2	22.7	27.3
Nominal Frequency/Frequency Range [Hz]	50/60/50±5/60±5			
THD	<3%			
Power factor	0.8 leading-0.8 lagging			
<b>Protection</b>				
DC Insulation Monitoring	Intergrated			
Input Reverse Polarity Protection	Intergrated			
Anti-island Protection	Intergrated			
Residual Current Monitoring	Intergrated			
Over-heat Protection	Intergrated			
AC Overcurrent Protection	Intergrated			
AC Short-Circuit Protection	Intergrated			
AC Overvoltage Protection	Intergrated			
DC Surge Protection	Intergrated			
AC Surge Protection	Intergrated			
<b>Battery Data</b>				
Battery Type	LiFePO <sub>4</sub>			
Battery Voltage Range [V]	40-60			
Max. Charging/Discharging Current [A]	100A/100A			
Communication Interface	RS485/CAN			
<b>General Information</b>				
Max. Efficiency	97.60%			
Communication	RS485/CAN/WiFi			
Ingress Protection Rating	IP65			
Cooling Mode	Natural			
Noise [dB]	<30dB			
Operation Temperature Range [°C]	-25-60			
Operation Altitude [m]	<4000			
Relative Humidity	100%			
Warranty [years]	6			
Weight [kg]	21.5			
Dimention (W*H*D) [mm]	494*420*195			
Certifications	EN 50549-1, RfG 3, EN 62109-1, EN 62109-2, IEC 61000-6-1/-2/-3/-4, IEC 61000-3-11, IEC61000-3-12			

## Features

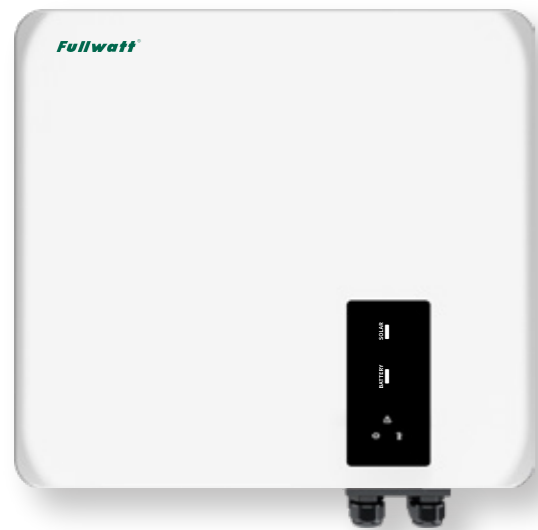


-  Features rich AI-home app
-  Galvanically isolated low voltage battery
-  Integrated emergency power supply function
-  Integrated smart energy management system
-  Easy to install



# Hybrid Inverter F-IVT201

Three Phase, High Voltage



## Features

-  Support unbalanced output
-  UPS Capability
-  Online monitoring via wifi and apps
-  Smart energy management
-  Easy to install

## Technical Data







Model	F-IVT201-8	F-IVT201-10	F-IVT201-12
<b>DC Input</b>			
Max. PV Input Power [W]	12000	15000	18000
Max. PV Input Voltage [V]		1000	
Max. PV Input Current [A]		13	
Max. Short-circuit Current per MPPT [A]		25	
MPPT Voltage Range [V]		180-850	
No. of MPPT Trackers		2	
No. of Input Strings per Tracker		1/1	
Back-feed Current [A]		0	
<b>AC Input</b>			
Rated AC Input Power [VA]	16000	20000	24000
Max. AC Input Power [VA]	17600	22000	26400
Rated AC Voltage [V]	3W+N+PE, 220 / 380 V; 230 / 400 V; 240 / 415 V		
Grid Frequency Range [Hz]	50/60		
<b>AC Output</b>			
Rated Grid Output Voltage [V]	3W+N+PE, 220 / 380 V; 230 / 400 V; 240 / 415 V		
Rated Output Frequency [Hz]	50/60		
Rated Output Power [W]	8000	10000	12000
Max. Apprent Power [W]	8000	11000	12000
Max. Output Current [A]	11.6	14.5	17.4
Max. Current per Phase [A]	12.7	15.9	19.1
Nominal Frequency/Frequency Range [Hz]	50/60/50±5/60±5		
THD	<3%		
Power factor	0.8 leading-0.8 lagging		
<b>Protection</b>			
DC Insulation Monitoring		Intergrated	
Input Reverse Polarity Protection		Intergrated	
Anti-island Protection		Intergrated	
Residual Current Monitoring		Intergrated	
Over-heat Protection		Intergrated	
AC Overcurrent Protection		Intergrated	
AC Short-Circuit Protection		Intergrated	
AC Overvoltage Protection		Intergrated	
DC Surge Protection		Intergrated	
AC Surge Protection		Intergrated	
<b>Battery Data</b>			
Battery Type		LiFePO <sub>4</sub>	
Battery Voltage Range [V]		150-600	
Max. Charging/Discharging Current [A]		50A/50A	
Communication Interface		RS485/CAN	
<b>General Information</b>			
Max. Efficiency		97.90%	
Communication		RS485/CAN	
Ingress Protection Rating		IP65	
Cooling Mode		Natural	
Noise [dB]		<35dB	
Operation Temperature Range [°C]		-25-60	
Operation Altitude [m]		<4000	
Relative Humidity		0-95%	
Warranty [years]		6	
Weight [kg]		30	
Dimention (W*H*D) [mm]		530*200*560	
Certifications	EN 50549-1,RfG 3, EN 62109-1, EN 62109-2, IEC 61000-6-1/-2/-3/-4, IEC 61000-3-11, IEC61000-3-12		



# Off Grid Inverter F-IVT301 High Frequency



## Features

-  Slim Body, Convenient Installation
-  Battery Reverse Connection Protection with Fuse Switch
-  Support Working without Battery
-  Parallel Function Up to Maximum 9 Units
-  High Precision of Output Voltage,  $\pm 5\%$
-  Communication Option: External WIFI

## Technical Data

Model	F-IVT301-3	F-IVT301-5
Input Formation	L+N+PE	
AC Input [VAC]	208/220/230/240	
Input Voltage Range	154~264VAC $\pm 3V$ (Normal Mode) 185~264VAC $\pm 3V$ (UPS Mode)	
Frequency [Hz]	50/60(Adaptive)	
Rated Power [W]	3000	5000
Output Voltage	208/220/230/240VAC $\pm 5\%$	
Output Frequency [Hz]	50/60 $\pm 0.1\%$	
Output Wave	Pure Sine Wave	
Transfer Time(Adjustable)	10ms for Computer Equipment, 20ms for Household Equipment	
Peak Power [VA]	6000	10000
Overload Ability	Battery Mode : Imin@102%~110% load 10s@110%~130% load 3s@130%~150% load 200ms>150% load	
Peak Efficiency(Battery Model)	>94%	
Rated Voltage [Vdc]	24	48
Constant Charging Voltage (Adjustable) [Vdc]	28.2	56.4
Float Charging Voltage (Adjustable) [Vdc]	27	54
PV Charging Method	MPPT	MPPT
Max PV Input [W]	4000	5500
MPPT Tracking Range [Vdc]	120~500	120~500
Best VMP Working Range [Vdc]	300~400	300~400
MAX PV Input Voltage [Vdc]	500	500
MAX PV Charge Current [A]	100	100
MAX AC Charge Current [A]	60	100
MAX Charge Current [A]	100	100
LCD	Can display operating mode/load/ input/output	
RS232	5PIN/Pitch2.54mm, Baud Rate 2400	
Expansion Slot Communication Interface	2x5PIN/Pitch2.54mm, Lithium Battery BMS Communication Card, WIFI 2x5PIN/Pitch2.54mm	
Parallel Interface	Not Support Parallel	Support Parallel
Operating Temperature [°C]	0~40	
Storage Temperature [°C]	-15~60	
Ork Altitude	IEC62040 to IEC62040No more than 1000m, If 1000m<, Rate power will lower, MAX 4000m, Refer	
Operating Environment Humidity	20%~95% Non Condensing	
Noise [dB]	<50	
Size L*W*H [mm]	495*312*125	
Standards and Certifications	EN-IEC 60335-1, EN-IEC 60335-2-29, IEC 62109-1	









# Off Grid Inverter

# F-IVT302

## Power Frequency



## Features

-  Pure sine wave output
-  Can support WIFI/GPRS
-  98% MPPT efficiency max 98%
-  DC start & automatic self-diagnostic fuction
-  AC start-up voltage auto restart voltage
-  Lead acid battery/Lithium battery

## Technical Data

Model	F-IVT302-1.5	F-IVT302-3	F-IVT302-5
AC Input Voltage [VAC]	220(standard)		
Input Voltage Range	154-264VAC±3v(Nor Model) 185-264VAC3v(UPS Model) 175-285VAC±3v(AVR Type)		
Lnput Frequency [Hz]	50/60±5%		
Out Put Power	2000VA/1600W	3000VA/2400W	5000VA/4000W
AC Model Output Voltage	The output voltage under the mains is the same as the input voltage(with AVR function 220V10%)		
AC Model Outout Frequency	The output frequency under the mains is the same as the inputfrequency		
Battery Model Output Voltage [VAC]	220±10%		
Battery Model Output Frequency [Hz]	50 or 60±1%		
Battery Model Output Wave	Pure Sine Wave		
Battery Type	External Lead-acid Battery, Gel Battery, Water Battery Or Lithium Battery		
Battery Voltage [Vdc]	12/24	24/48	24/48
Battery Charging Voltage [Vdc]	13.75/27	27/54	27/54
Maximum Pv Array Power	12v:800W 24V:1600W 48V:3200W		
Solar Input Voltage Range	12V: MPPT 15V-150Vdc/ PWM 15V-30Vdc 24V:MPPT 30V-150Vdc/ PWM 30V-60Vdc 48V: MPPT 60V-150Vdc/PWM 60v-105Vdc		
Maximum PV Displayopen Circuit Voltage	12V:MPPT 150Vdc/Pwm 30Vdc 24V:MPPT 150Vdc/ PWM 60Vdc 48V:MPPT 150Vdc/PWM 105Vdc		
Maximum Solar Charging Current [A]	60		
Maximum AC Charge Current [A]	40/20	30/15	42/21
Battery Charging Voltage Range [VAC]	154-280		
Transfer Time	≤10ms (UPS)/s20ms (INV)		
Load Peak Ratio	(MAX)3:1		
Protective Function	Under the mains : input overcurrent fuse Under inverter: overload protection,short circuit protection, low voltage protection, (with battery anti-reverse connection,board).		
Status Display	You can view parameters such as AC voltage, AC frequency, PVvoltage, PV current, output voltage output frequency, battery voltage, load current and other parameters by turning the page keys.		
Voice Prompt	Low battery protection buzzer long beep/Low battery buzzer beeps every second Machine fault buzzer beeps/overload buzzer beeps When the overload is less than 130%, the buzzer will sound every second,andthe output will be turned off after 30s. when the overload is greater than 150%, the output will be turned off after 300ms.		
Operating Temperature [°C]	0-40		
Storage Temperature [°C]	-15-45		
Relative Temperature [°C]	-10-90 No Condensation		
Noise [dB]	<45		
Size (L*W*H) [mm]	512*320*136		





# Battery Pack

## F-ES201

### Low Voltage Battery

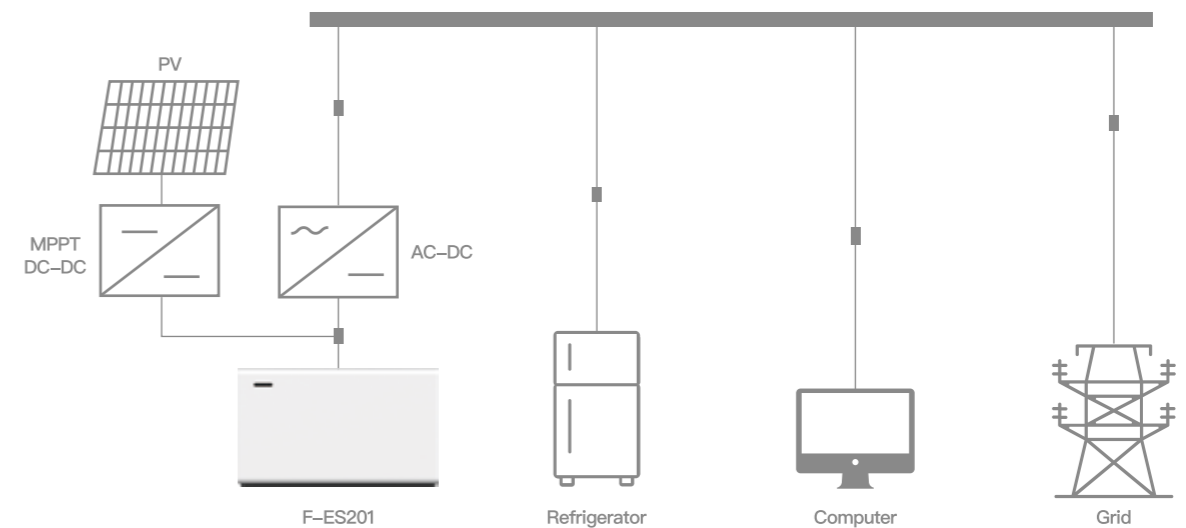


## Features

-  Lithium Iron Phosphate Battery
-  5 years quality assurance
-  Easy installation
-  Compatible with various inverters
-  International certification

## Technical Data

Model	F-ES201-5K	F-ES201-10K	F-ES201-15K	F-ES201-20K	F-ES201-25K	F-ES201-30K
Battery Type	LiFeO4					
Rated Capacity [KWh]	5.12	10.24	15.36	20.48	25.6	30.72
Usable Capacity [KWh]	5	10	15	20	25	30
Nominal Voltage [V]	51.2					
Operation Voltage Range [V]	44.8-57.6					
Rated Charging Current [A]	50					
Max Charging Current [A]	100					
Rated Discharging Current [A]	100					
25°C Standard Cycles(80%DOD)	>5000					
45°C Standard Cycles(80%DOD)	>2000					
Warranty [year]	5					
Operation Temperature [°C]	Charge: 0-55 Discharge: -20-55					
Storage ambient temperature [°C]	Less than 12 months : -10-3 less than 3 months: -10-4 Less than 7 day : -20-65					
Cooling Mode	Nature Cooling					
Ingress Protection Rating	IP65					
Communication	RS485/CAN					
Applications	On Grid/On Grid + Backup					
Dimensions (L*W*H) [mm]	700*180*450	700*180*860	700*180*1270	700*180*860 700*180*860	700*180*860 700*180*1270	700*180*860 700*180*1270
Weight [kg]	< 50	< 100	< 150	< 200	< 250	< 300
Certifications	EN/IEC 62619, EN 61000-6-1/-3, UN38.3					











# Battery Pack

## F-ES205

### High Voltage Battery

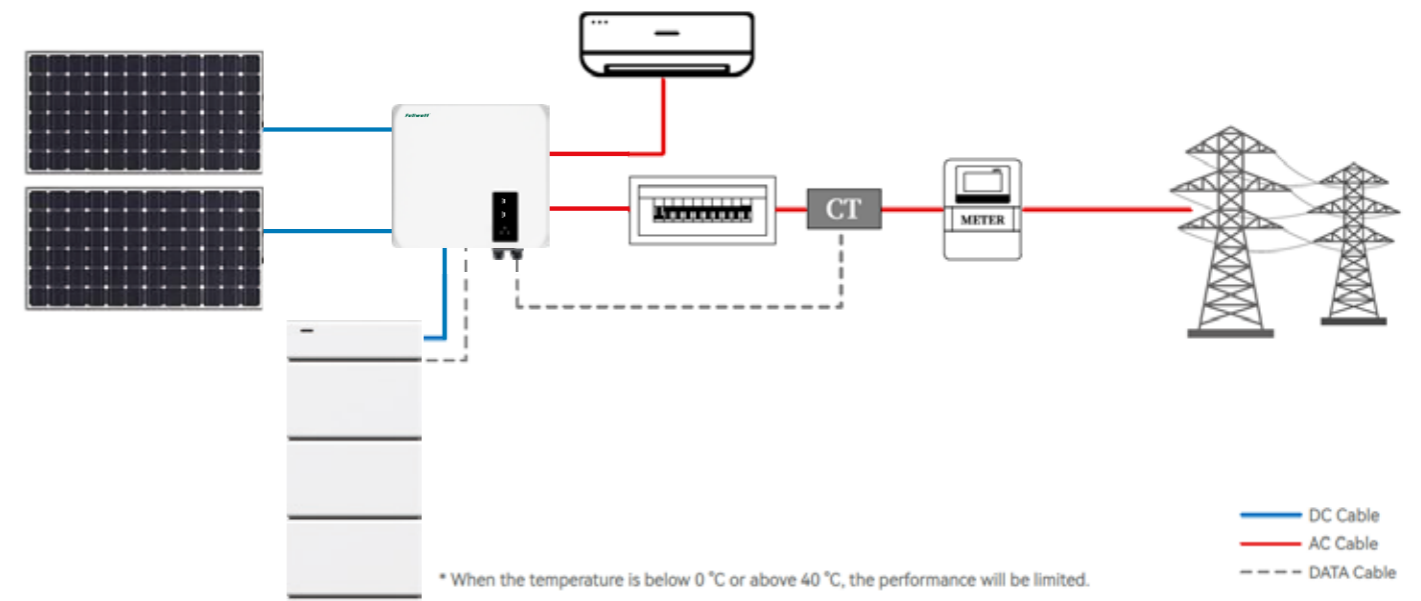


## Features

-  5-30kWh optional capacity
-  Ultra low available charging temperature
-  Compact size and space saving
-  Module auto recognition
-  Remote firmware upgrade and diagnosis
-  IP 65

## Technical Data

Model	F-ES205-5K	F-ES205-10K	F-ES205-15K
Battery Type	LiFePO <sub>4</sub>		
Rated Capacity [kWh]	4.8	9.6	14.4
Nominal Voltage [V]	96	192	288
Operation Voltage Range [V]	84-108	168-216	252-324
Rated Charging Current [A]	25		
Max Charging Current [A]	50		
Rated Discharging Current [A]	50		
25°C Standard Cycles(80%DOD)	>5000		
45°C Standard Cycles(80%DOD)	>2000		
Warranty [year]	5		
Operation Temperature [°C]	Charge: 0-55 Discharge: -20-55		
Storage ambient temperature[°C]	Less than 12 months : -10-3 less than 3 months: -10-4 Less than 7 day : -20-65		
Cooling Mode	Nature Cooling		
Ingress Protection Rating	IP65		
Communication	RS485/CAN		
Applications	On Grid/On Grid + Backup		
Dimensions (L*W*H) [mm]	700*180*658	700*180*1068	700*180*1477
Weight [kg]	<88	<125	<160
Certifications	EN/IEC 62619, EN 61000-6-1/-3,UN38.3		





All-in-one Machine

# F-ES102

Single Phase High Voltage



All In One

## Features



### High performance

- 200% PV Over management
- 200% backup overload capacity
- Max. efficiency 97.3%, battery efficiency 97%



### High reliability

- UPS level redundant protection
- Three-level firmware and two-level hardware battery protection
- Multiple temperature monitoring, delicate thermal management



### High intelligence

- Internal EMS optimize home energy supply automatically
- PV production forecast
- Build-in electric power service, FCAS, VPP, ect
- Online monitoring, online diagnosis, online service

## Technical Data

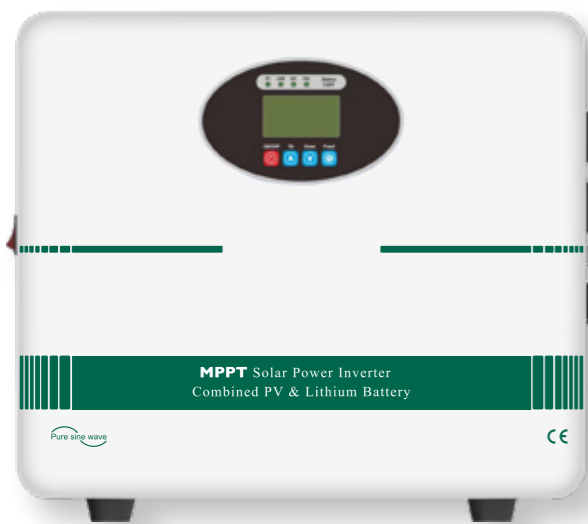
Model	F-ES102-5.0
<b>DC Input</b>	
Max. PV Input Power [W]	10000
Max. PV Input Voltage [V]	580
Max. PV Input Current [A]	15/15
Max. Short-circuit Current per MPPT [A]	18.75/18.75
MPPT Voltage Range [V]	100-550
No. of MPPT Trackers	2
No. of Input Strings per Tracker	1/1
Back-feed Current [A]	0
<b>AC Input</b>	
Rated AC Input Power [W]	5000
Max. AC Input Power [W]	5000
Rated AC Voltage [V]	230
Grid Frequency Range [Hz]	50/60
<b>AC Output</b>	
Rated Grid Output Voltage [V]	230
Rated Output Frequency [Hz]	45-55/55-65
Rated Output Power [W]	5000
Max. Apprent Power [W]	5000
Max. Output Current [A]	21.7
Max. Current per Phase [A]	21.7
Nominal Frequency/Frequency Range [Hz]	50/60
THD	<3%
Power factor	0.8 leading-0.8 lagging
<b>Battery Data</b>	
Battery Type	LiFePO <sub>4</sub>
Nominal Battery Capacity [KWh]	10.1
Usable Battery Capacity [KWh]	9.6
Nominal Battery Voltage [V]	96
Operation Voltage Range [V]	90-108
Cycle lifetime	8000
Max. Charging/Discharging Current [A]	52.5/52.5
<b>General Information</b>	
Max. Efficiency	97.30 %
Communication	CAN/RS485(Optional)
Ingress Protection Rating	IP65
Cooling Mode	Nature Convection
Noise [dB]	<30
Operation Temperature Range [°C]	-10-50
Operation Altitude [m]	≤4000
Relative Humidity	0-95%(Without Condensing)
Warranty [years]	5 /10 (Optional)
Weight [kg]	Inverter:19.5/Battery:90/Inverter:590x405x205
Dimensions (W*H*D) [mm]	Battery:590*750*205
Certifications	VDE 4105-AR-N, VDE 0126-1-1, IEC 62109-1&-2, IEC 62477, IEC 62619, IEC 62040, UN 38.3 EN 61000-6-1&-2&-3&-4











All-in-one Machine

# F-ES103

Mobile Energy Storage



## Features

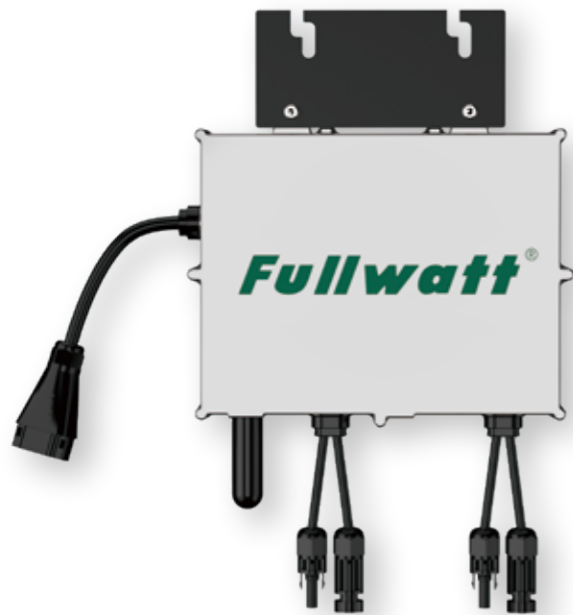
-  Excellent performance because of an MCU intelligent control technology
-  A wide range of applicable loads because of pure sine wave AC output
-  Convenient and practical 5VDC USB output port and 12VDC output port;
-  Solar array and battery common-anodesystem input
-  Charge by mains supply for flexible configuration (optional function)
-  Overcharge protection and overdischarge protection for a longer battery life
-  LCD and LEDS for visualization of operation status of the equipment
-  Overall automatic protection and alarms including AC output over load protection, short circuit protection, etc

## Technical Data

Model	F-ES103-0.6	F-ES103-1.2	F-ES103-2.2	F-ES103-3.5	F-ES103-5
<b>Inverter</b>					
Battery Voltage [V]	12.8	25.6			
In-built Battery Specification [V]	50Ah/12.8	50Ah/25.6	100Ah/25.6	75Ah/51.2	100Ah/51.2
Rated Power [W]	600	1200	2200	3500	5000
Output Voltage [VAC]	110/220				
Output Frequency [Hz]	50/60				
Output Waveform	Pure Sine Wave				
Input Voltage Range [VAC]	72-138/145-275		85-138/170-275		
Input Frequency [Hz]	45-65				
<b>MPPT Charge</b>					
Maximum Photovoltaic Voltage [V]	1≤100	≤100	≤150		
PV Input Range Voltage [V]	18-100	35-100	60-150		
Rated Charge Current [A]	MPPT 30				60(MAX.)
Maximum Power [Wp]	420	840	1600	3000	
Voltage Of Floating Charge [V]	14.2	28.4	56.8		
MPPT Efficiency	>97%			>99%	
<b>DC Output</b>					
Voltage Of High-Voltage Protection [V]	16	32	64		
Voltage Of High Voltage Recovery [V]	14.5	29	58		
Voltage Of Low Voltage Recovery [V]	13	26	52		
Voltage Of Low Voltage Protection [V]	11.2	22.4	44.8		
5Vdc USB Output Port	2 Units/MAX 2A				
12Vdc Output Port	2DC Ports/MAX 2A				
<b>Other</b>					
Heat Dissipation/Cooling	Temperature Control By Intelligent Exhaust Fan				
Ambient Temperature For Operation [°C]	-20±50				
Ambient Temperature For Storage [°C]	-25±55				
Operation/Storage Conditions	0-90% (No Condensation)				
External Dimensions: D x W x H [mm]	460*182*397	485*202*406	500*229*464	577*350*644	627*405*664
Packing Dimensions: D x W x H [mm]	527*267*470	552*277*477	570*310*535	665*450*825	715*505*845



# Micro Inverter F-MI 101

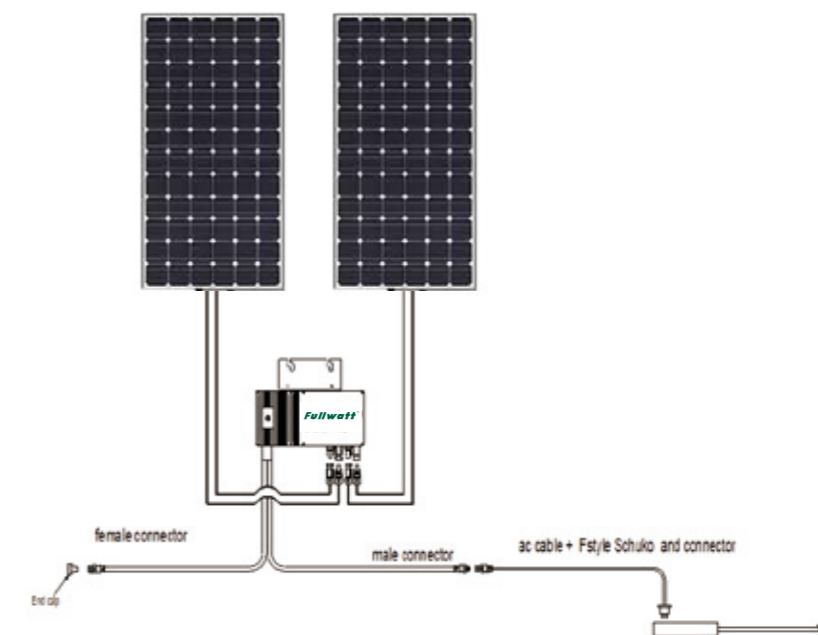


## Features

-  Build-in wifi for remote monitoring
-  High efficiency with 95.5% CEC
-  Globally certificated
-  Integrated grounding for easy installation
-  IP 67 enclosure rating

## Technical Data

Model	F-MI 101-300	F-MI 101-400	F-MI 101-600	F-MI 101-800
<b>DC Input</b>				
Max. PV Module Power [W]	400	600	450*2	600*2
Max. PV Input Voltage [V]	60			
Max. PV Input Current [A]	14		18*2	17*2
MPPT Tracking Range [V]	22-55			
Startup Voltage [V]	24			
MPPT Tracking Accuracy	>99.5%			
Overload Protection Category	II			
<b>AC Output</b>				
Peak AC Output Power [W]	350	400	600	800
Max. Continuous Output Power [W]	300	350	580	750
Rated Output Voltage [V]	230			
Nominal Output Voltage Range [V]	207 ~ 253			Configurable
Max. Continuous Output Current [A]	1.3	1.52	2.52	3.26
Nominal Frequency / Range [Hz]	50/Configurable			
Power Factor (Nominal/Adjustable Range)	1.0/0.8 leading...0.8 lagging			
AC Short Circuit Fault Current Over 3 cycles [Arms]	2.2	2.4	4.4	8.2
THDi@Rated Power	<3%			
Max. Units per 20A Branch	12	10	7	5
Overvoltage Protection Category	III			
<b>Efficiency</b>				
Peak Efficiency	97.1%	97.3%	97.1%	97.3%
MPPT Efficiency	>99.5%			
Night Power Consumption [mW]	80		110	
<b>General Information</b>				
Protection Degree	IP67			
Operating Ambient Temperature Range [°C]	-40~+65			
Relative Humidity Range	0-100%			5-98%
Dimensions (W x H x D) [mm]	180*186*25		277*132*50	268*250*42
Weight [kg]	1.5		2.9	
DC Connector Type	MC4			
AC Connection Type (inverter-inverter)	Trunk Cable			
Communication Method	2.4 GHz wifi			
Certifications	VDE 4105, VDE 0126, CEI 0-21, AS 4777.2&3, EN 50438			








# Micro Inverter F-MI 102

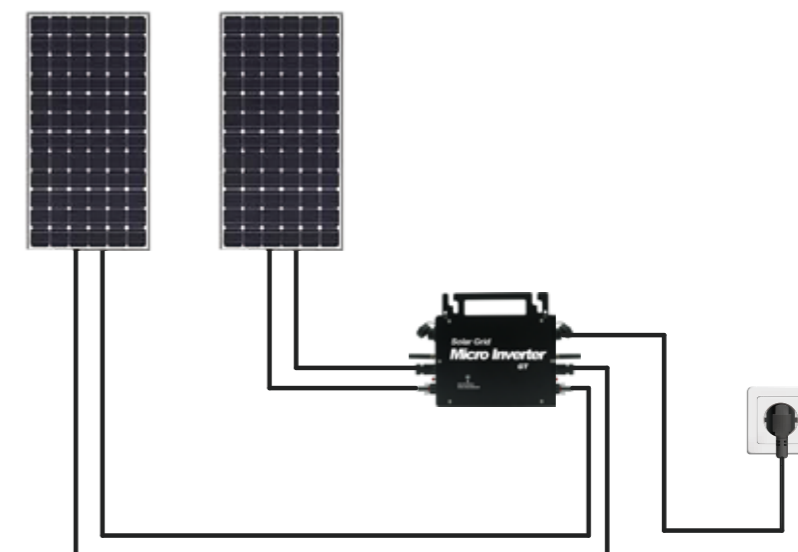


## Features

-  Build-in wifi for remote monitoring
-  MPPT efficiency 99.5%
-  Globally certificated
-  Smartphone APP monitoring
-  Waterproof grade IP 66

## Technical Data

Model	F-MI 102-300	F-MI 102-400	F-MI 102-600	F-MI 102-800
<b>DC Input</b>				
Max.Input Power [W]	300	400	600	800
Max.Input Current [A]	12	16	12*2	16*2
Max.Input Voltage [V]	50			
Startup Voltage [V]	22			
Operating Voltage Range [V]	20-50			
MTTP Tracking Range [V]	16-68		22-48	
<b>AC Output</b>				
Unidirectional Network [V]	120/230			
Max.Output Power [W]	300	400	600	800
Nominal Output Voltage [VAC]	120/230			
Nominal Output Current [A]	2.5/1.3	3.3/1.7	5/2.6	6.6/3.4
Nominal Output Voltage Range [V]	80-160/180-270			
Nominal Frequency/Range [Hz]	50/60			
Nominal Frequency/Range Range [Hz]	48-51/58-61			
Power Factor	>0.99%			
THDi@Rated Power	<5%			
<b>Efficiency</b>				
Peak Efficiency	95%			
MPPT Efficiency	99.5%			
Night Power Consumption [W]	<1			
<b>General Information</b>				
Protection Degree	IP66			
Operating Ambient Temperature Range[°C]	-40~+65			
Storage Temperature Range [°C]	-40~+85			
Weight [KG]	1.6		2	
Dimensions(WxHxD) [mm]	240*185*45		310*185*45	
Max.AC Bus Cable Current [A]	20			
Cooling Mode Natural Convection	Fanless			
<b>Other Functions</b>				
Communication Method	WIFI			
Transformer Type	High Frequency Transformer, No Isolation			
Protections	Shutter Island, Voltage, Current, Temperature, Frequency			
Certifications	EN IEC61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A1:2019+A2:2021, EN IEC55014-2:2021			





# Balcony Battery F-ES210

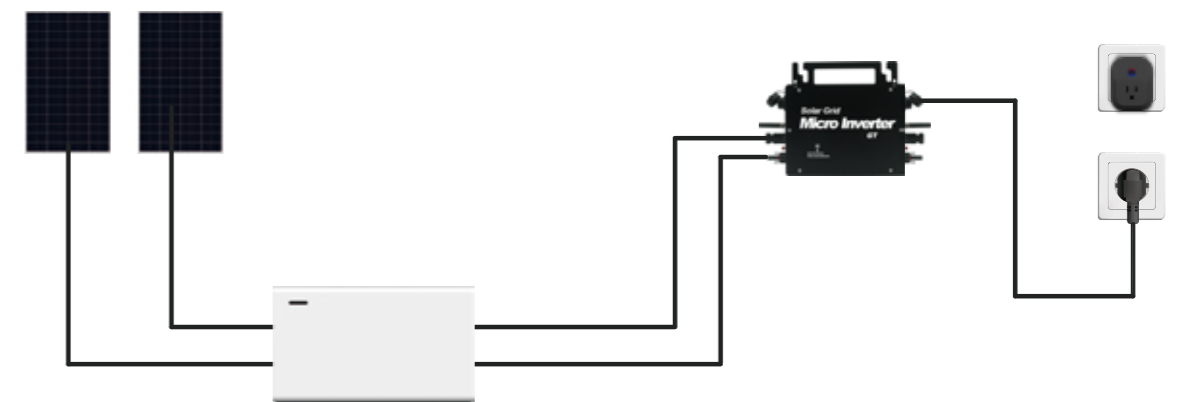


## Features

-  Longest-Lasting Lifespan, Supercharged Earnings 6000 Cycles
-  Compatible with 99% of Balcony Solar Power Systems
-  Easy Plug-and-Play Installation Set up in 5-Minutes
-  Massive 1.92kWh Capacity

## Technical Data

Model	F-ES210-2K
<b>Electrical Performance</b>	
Battery Type	LiFePO <sub>4</sub>
Normal Capacity [kWh]	1.92kWh
Energy Density [Ah]	50Ah
Unit Nominal Battery Voltage [V]	38.4V
Working Voltage Range [V]	47.2-56.8V
Rated Charging Current [A]	25A
Rated Discharging Current [A]	25A
Cycle Life At 25 °C 90% DOD	>6000cycles (0.5C@70%)
Cycle Life At 45 °C 90% DOD	>2000cycles (0.5C@70%)
<b>General Parameters</b>	
Communicate	CAN/RS485
Protection Degree	IP55
Thermal Profile	Natural Convection
Charging Operating Temperature Range [°C]	0-55°C
Discharging Operating Temperature Range [°C]	-10-55°C
Storage Temperature [°C]	-20-55°C
Altitude [M]	2000
Work Environment Humidity	5-95%
Warranty	5 years/10 years (optional)
Dimensions [mm]	700*180*450
Wright [kg]	35kg
Accessories	Electronic instruction manual; Quick Installation Manual; Shipping List






# Folding PV Modules

## F-SP101



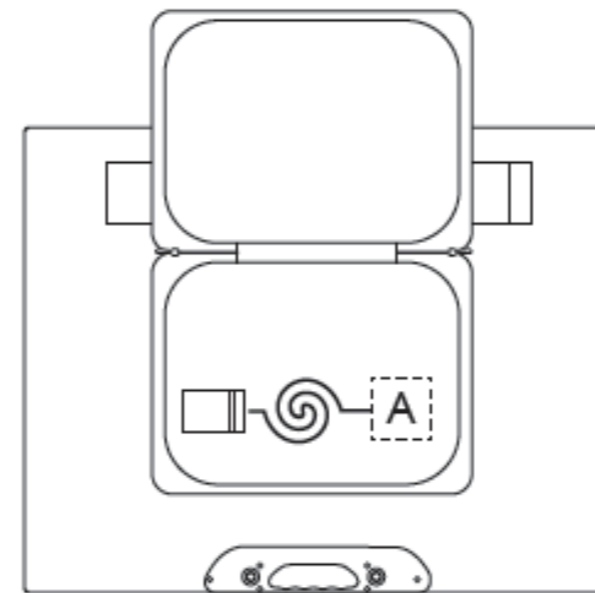
### Features



-  Acceptable drop height within 1 m
-  Compact design
-  magnetic suction handle
-  Using waterproof fabrics
-  Life up to 10 years

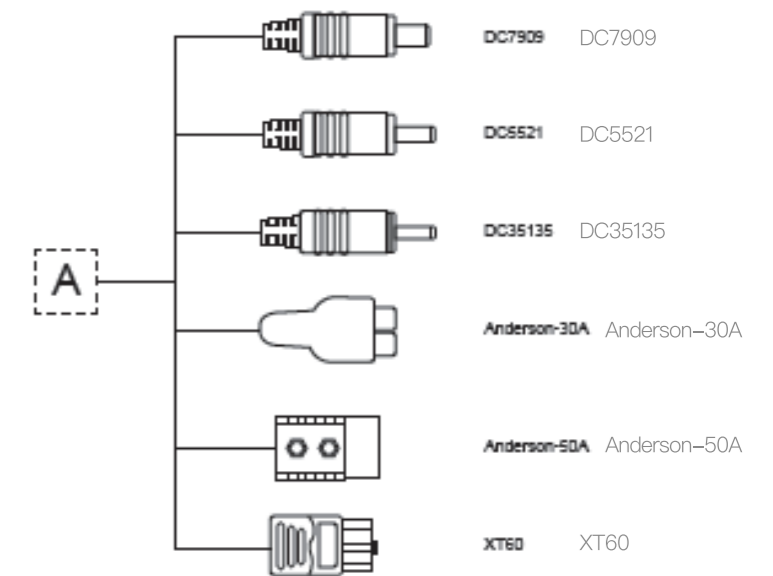
### Technical Data

Model	F-SP101-2		F-SP101-4	
<b>Configuration</b>				
No. of folds	2 Folds		4 Folds	
Peak Power (STC) [W]	100	75	200	165
Maximum Power Voltage [V]	18.44	20.38	19.6	44.01
Maximum Power Current [A]	5.42	4.61	10.21	4.64
Open-circuit voltage [V]	21.45	17.26	22.82	37.66
Short-circuit current [A]	5.75	4.34	10.75	4.38
Maximum System Voltage [V]	1000			
Unfold size [mm]	1254*516.5*25		2266*537*25	
Folded size [mm]	516.5*607*45		537*607*55	
Weight [kg]	4.77		8.96	
Cell Technology	ETFE		ETFE	
Certifications	CE, ROHS			



If your power station input hole does not contain the above 6 connectors, please contact customer service.

6 types of export.  
Suitable for most outdoor power equipment.








# Outdoor Power F-ES301



## Fast Charging



## Features

-  Quickly charged to 80% of its capacity within 1.5 hours
-  Bi-directional Inverter Fast Charging Technology
-  Suitable for multiple scenarios

## Technical Data

Model	F-ES301-06	F-ES301-10
<b>AC Input</b>		
Input Power [W]	250	500
Solar Input Power [W]	120	200
Car Port Input Power [W]	60	60
Car Port Input Voltage [V]	12	12
<b>AC Output</b>		
AC Output	1*AC Output	2*AC Output
Rated Output Power [W]	600	1000
Peak Power [W]	1200	2000
<b>DC Output</b>		
USB A [x3]	QC 3.0 18W each,54W max	
USB C [x1]	PD3.0 60W max	
DC Output	1*Cigarette lighter port 12V/10A	
<b>Battery</b>		
Battery Type	18650 NCM Lithium-ion	18650 NCM Lithium-ion
Capacity [Wh]	346	933
Rated Voltage [V]	22.2	
Rated Current [Ah]	15.6	42
Wall Charger Full Recharging Time [H]	1.4	1.9
Solar Panel Full Recharging Time [H]	2.9 (using 1x200W Solar Panel)	4.7 (using 1x200W Solar Panel)
Car Port Full Recharging Time [H]	5.8	15.5
<b>Other Functions</b>		
Pure Sine Wave	YES	
Wireless Charger	YES	
Light	1* LED light,1W 1* flashlight with SOS mode ,1W	
LCD Display	1.Real-time fully charged time 2.Precise state of charge display 3.Real-time usable time 4.Separate output display, available for USB/DC/ACoutputs	
ECO Button	YES	
Protections	Overcharging,Low voltage,Over Voltage,Over Current Low Temperature,Over Temperature,Low Battery Alarm,Short Circuit,Overload	
<b>General Information</b>		
Charging Temperature [°C]	0~40°C	
Operating Temperature [°C]	- 10~40°C	
Product Size(L*W*H) [mm]	230*168*178	290*201*200
Weight [kg]	4.3	8.6
Certificate	TUV-CE,RoHS	
Shell Material	PC+ABS (It can reach V-0 Flame retardant grade)	
Accessories	AC cable,car charger cable and an instruction manual.	








# Outdoor Power F-ES302



## Features



-  Compatible with Type-C charging and Apple devices
-  Multiple integrated protections
-  Wireless charger
-  Built-in Light
-  Easy to Carry

## Technical Data

Model	F-ES302-03	F-ES302-05	F-ES302-10
<b>DC Input</b>			
Max.DC Input Power [W]	48	100	150
Max.Car Port Input Power [W]	55	60	60
Max.Solar Input Power [W]	80	100	120
Input Voltage Range [V]	12-28		
Solar Panel Input Range [V]	12-28		
Car Port Input [V]	12		
<b>AC Input</b>			
AC Output	1*AC Output	1*AC Output	2*AC Output
Rated Output Power [W]	300	500	1000
Peak Power [W]	600	1000	2000
<b>DC Output</b>			
USB A [x2]	QC3.0 18W each,36W max	QC3.0 18W each,54W max	QC3.0 18W each,54W max
USB C [x1]	PD3.0 60W max		
DC Output	1*Cigarette lighter port 12V/10A		
<b>Battery</b>			
Battery Type	18650 NCM Lithium Battery		
Capacity [Wh]	231	400	933
Rated Voltage [v]	22.2		
Rated Current [Ah]	10.4	18	42
Wall Charger Full Recharging Time [H]	4.8	4.0	6.2
Solar Panel Full Recharging Time [H]	3.8H (using 1x60W Solar Panel)	3.0H (using 1x120W Solar Panel)	7.8H (using 1x120W Solar Panel)
Car Port Full Recharging Time [H]	4.2	6.7	15.5
<b>Other Functions</b>			
Pure Sine Wave	YES	YES	YES
Wireless Charger	NO	Yes,1*10W Wireless Charger	Yes,1*10W Wireless Charger
Light	1*flashlight with SOS mode,1W	1*LED light,1W 1*flashlight with SOS mode, 1W	1*LED light,1W 1*flashlight with SOS mode, 1W
LCD Display	1.Real-time fully charged time 2.Precise state of charge display 3.Real-time usable time 4.Separate output display ,available for USB/DC/AC outputs		
ECO Button	NO	YES	YES
Protections	Overcharging,Low voltage,Over Voltage,Over Current,Low Temperature, Over Temperature,Low Battery Alarm,Short Circuit,Overload		
<b>General Information</b>			
Charging Temperature [°C]	0-40°C		
Operating Temperature [°C]	-10-40°C		
Product Size(L*W*H) [mm]	192*142*148	230*168*178	290*201*200
Weight [kg]	2.8	4.3	8.6
Certificate	TUV-CE,RoHS		
Shell Material	PC+ABS(It can reach V-0 Flame retardant grade)		
Accessories	AC wall plug power adapter,car charger cable,an instruction manual.		



## Accessories

### Solar Panel MC4 Cable

2.5mm<sup>2</sup>



5M



10M



15M

4mm<sup>2</sup>



5M



10M



15M

### Micro Inverter Connector Cable



2M



3M



5M



10M



15M

## Installation Location

