



BEST SOLAR SOLUTIONS FOR YOU!

KEEP YOUR BELOVED ONES PROTECTED FROM ELECTRICITY



FOUNDED IN 2007

Suntree Electric was established on May 8, 2007, and has been focusing on new energy sector and overseas market.

SERVICE

Our mission is to provide best service to our customers and concentrate on building a long-term partnership

CERTIFICATION

Our Products are certified by TUV(Germany), CE, SAA, IEC, CB, international certification

DELIVERY

Products are exported to more than 150 countries and delivery fast

OUR ADVANTAGES

Building up the global sales network organization to ensure convenient and best products and service for our customers

OUR COMPANY

Suntree Electric Group Co., Ltd. is a leading global provider of solar energy and fast electric vehicle charger system since 2007.

Mainly focuses on three sectors: "New Energy", "Smart Electricity" and "Power Grid"; Committed to providing a one-stop solution for solar system protection; Among six main brands of Suntree Group, Suntree, Shanghai Suntree and Nudy are most highlighted.

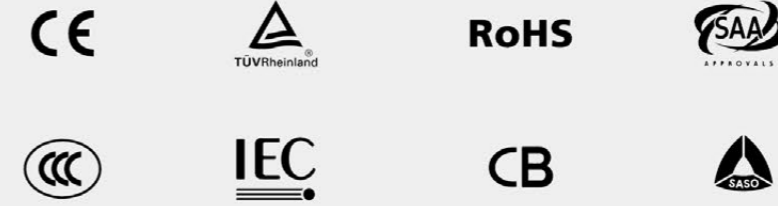
Set an extensive global network in more than 110 countries and regions, especially the Swedish distributor who has 24 branches and offices.

Bring solutions to more than 3000 customers, achieve business growth by 20%. Since Suntree Electric Group was founded, we have never stopped exploring the balance between human, nature and technology, and we have brought safe electricity to the ones you loved.





CERTIFICATIONS



Our PV solutions and complete range of products, On grid, Off-grid, Hybrid. Include a wide variety of internal components and hardware that comply with global industry standards. We offer multiple certificates for all components in our product line that follow local standards and codes required for your specific regions or markets.

This ensures safe installations and promotes optimal photovoltaic practices.

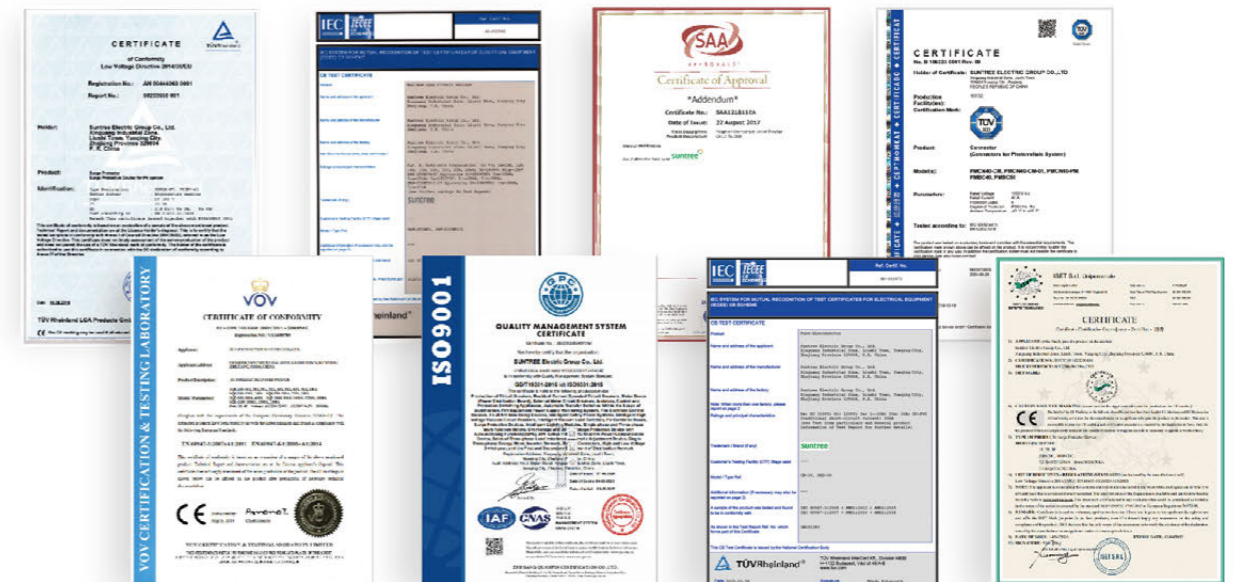


OUR TEAM

Professional . Solidarity
Principled . Be imaginative

We established a very professional team. Each of our colleague can provide you best service. If you have any question please contact us.

Our team adheres to the principle of good faith, standard and high efficiency, obtains the reputation by the high quality service, and whole-heartedly provides the high quality solution for the general customers.





ON GRID SOLAR SYSTEM

On-grid or grid-tie solar systems are by far the most common and widely used by homes and businesses.

These systems do not need batteries and use common solar inverters and are connected to the public electricity grid. Any excess solar power that you generate is exported to the electricity grid and you usually get paid a feed-in-tariff (FiT) or credits for the energy you export.



SYSTEM COMPONENTS



01 Solar Panel

Monopoly/halfcell/flexible/fullblack solar panel



02 Solar Inverter

On grid solar inverter



03 PV Cable

Has excellent acid resistance and heat resistance



04 MC4 Connector

Contact material is copper and tin plated



Configuration of PV System

- Solar Panel
- Roof/Ground Mounting System
- DC/AC Combiner Box
- On Grid Inverter
- DC/AC Cables
- PV Installation Tools

Main Advantages

- Reducing electricity bills
- Easy to installation and maintenance
- Effective utilization of generated power



MONO PERC DHM-66L9(BB)

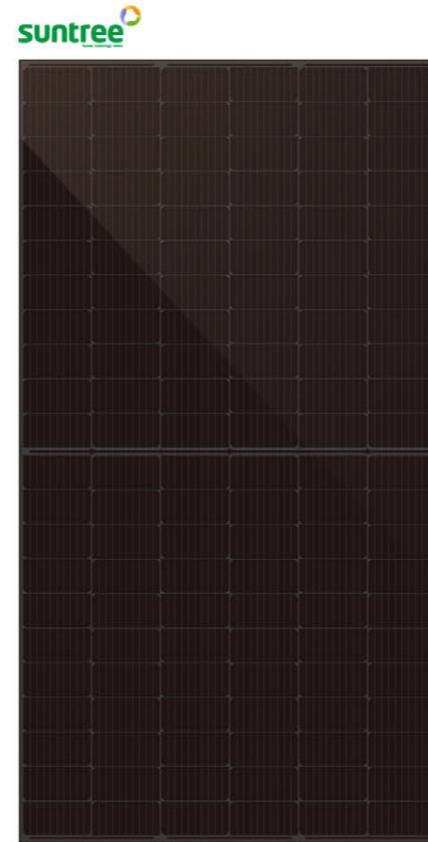
HALF-CELL HIGH EFFICIENCY PV MODULE

Mechanical Specification

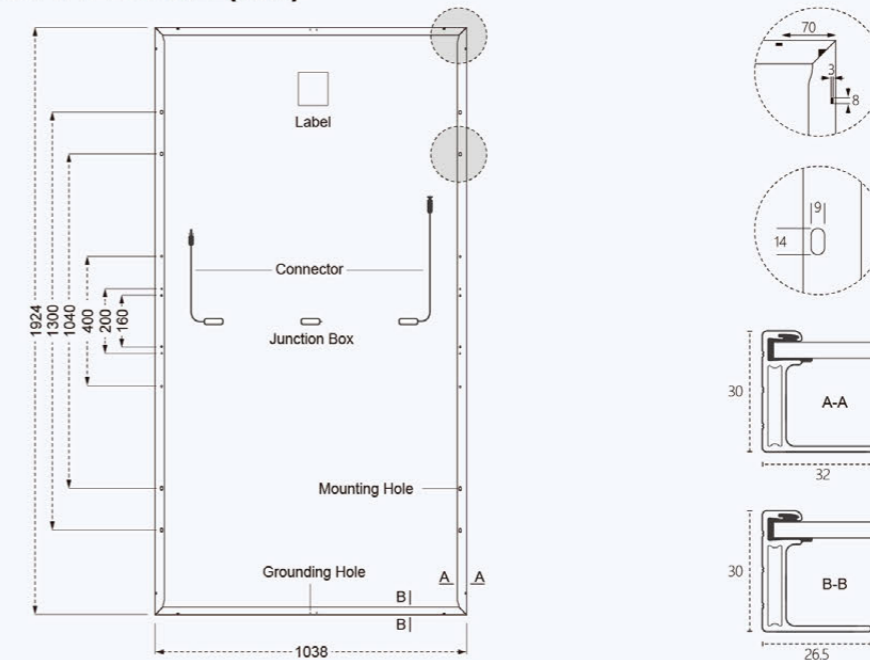
Cells Type Mono 166×83mm	Dimension (L×W×T) 1924×1038×30mm
Weight 22kg	Packing 36pcs/pallet, 864pcs/40HQ
Cable (Including connector)	4.0mm ² , Portrait: 300mm(+)/400mm(-) Landscape: 1400mm(+)/1400mm(-)
No. of Cells	132 (6×22)
Glass	3.2mm High Transmission, Antireflection Coating
Junction box	IP68, 3 Bypass Diodes
Connector	MC4 Compatible

Operating Parameters

Maximum system voltage	1500V DC
Operating Temperature	-40 ~ +85°C
Maximum series fuse rating	20A
Snow load, frontside	5400Pa
Wind load, backside	2400Pa
Nominal operating cell temperature	45°C±2°C
Application level	Class A



DIMENSIONS OF PV MODULE(mm)



STC-Electrical Characteristics

Module Type	DHM-66L9(BB)			
Maximum Power (Pmax)	405	410	415	420
Open-circuit Voltage (Voc)	45.0	45.2	45.4	45.6
Maximum Power Voltage (Vmp)	37.4	37.6	37.8	38.0
Short-circuit Current (Isc)	11.30	11.36	11.42	11.48
Maximum Power Current (Imp)	10.83	10.90	10.98	11.05
Module Efficiency (%)	20.28	20.53	20.78	21.03
Temperature Coefficient of Isc				0.05%/°C
Temperature Coefficient of Voc				-0.31%/°C
Temperature Coefficient of Pmax				-0.35%/°C

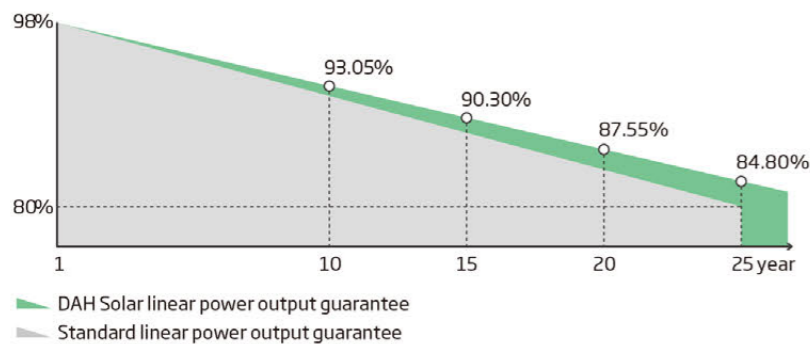
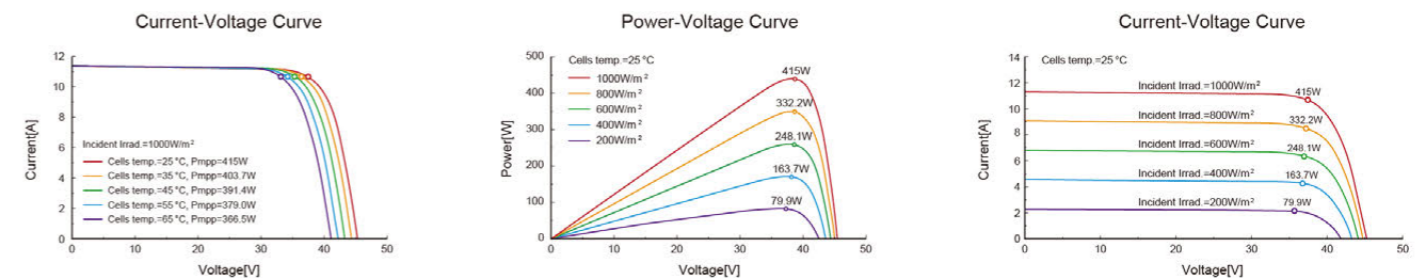
Standard Test Environment : Irradiance 1000W/m², Cell temperature 25°C, Spectrum AM1.5

NOCT-Electrical Characteristics

Maximum Power (Pmax)	301	305	309	312
Open-circuit Voltage (Voc)	42.2	42.4	42.6	42.8
Maximum Power Voltage (Vmp)	35.1	35.3	35.5	35.6
Short-circuit Current (Isc)	9.13	9.18	9.23	9.28
Maximum Power Current (Imp)	8.59	8.65	8.71	8.77

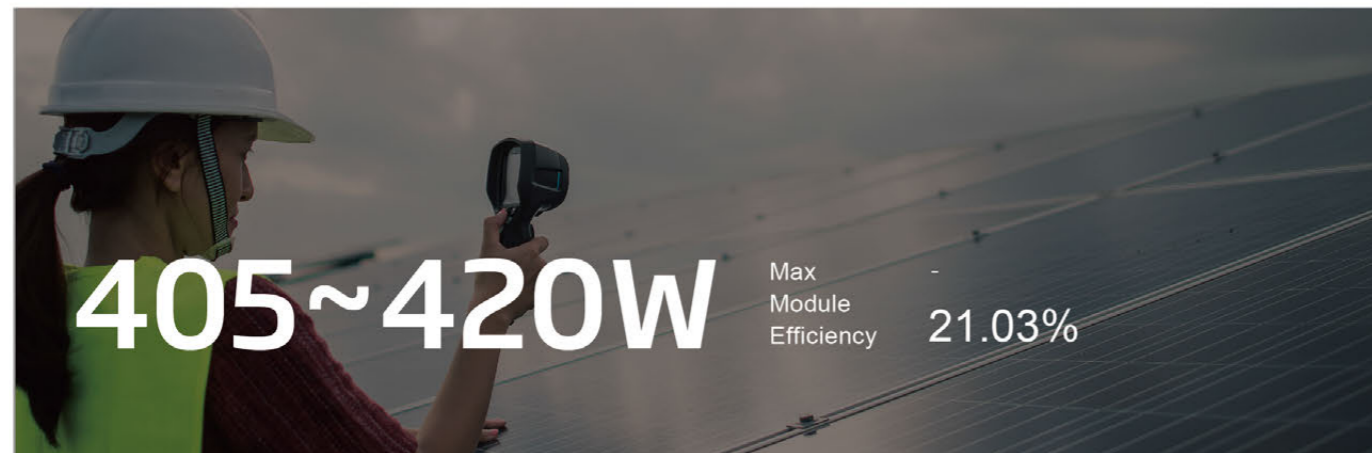
Standard Test Environment : Irradiance 800W/m², Ambient temperature 20°C, Spectrum AM1.5, Wind speed 1m/s

I-V Curve DHM-66L9(BB)-415W



Quality Guarantee

12-year Material & technology warranty
25-year Linear power output warranty



BACKSHEET

MONOCRYSTALLINE MODULE



ELECTRICAL DATA (STC)

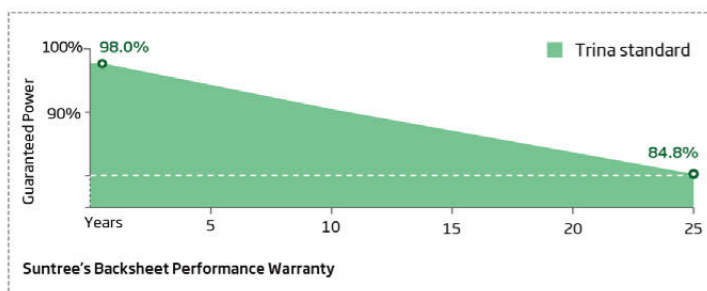
Peak Power Watts-P _{MAX} (Wp)*	540	545	550	555	560
Power Tolerance-P _{MAX} (W)	0 ~ +5				
Maximum Power Voltage-V _{MPP} (V)	31.2	31.4	31.6	31.8	32.0
Maximum Power Current-I _{MPP} (A)	17.33	17.37	17.40	17.45	17.49
Open Circuit Voltage-V _{oc} (V)	37.5	37.7	37.9	38.1	38.3
Short Circuit Current-I _{sc} (A)	18.41	18.47	18.52	18.56	18.60
Module Efficiency _{n,m} (%)	20.7	20.9	21.0	21.2	21.4

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5, *Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

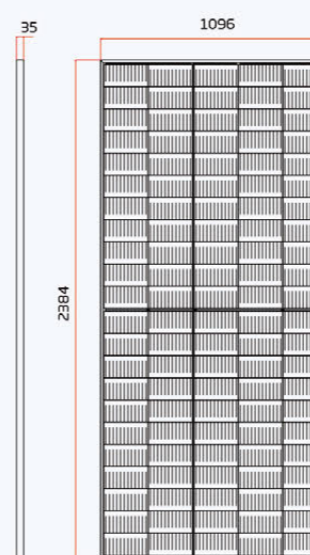
Maximum Power-P _{MAX} (Wp)	409	413	417	420	424
Maximum Power Voltage-V _{MPP} (V)	29.0	29.2	29.3	29.5	29.7
Maximum Power Current-I _{MPP} (A)	14.10	14.15	14.19	14.23	14.26
Open Circuit Voltage-V _{oc} (V)	35.3	35.5	35.7	35.9	36.1
Short Circuit Current-I _{sc} (A)	14.84	14.88	14.92	14.96	14.99

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

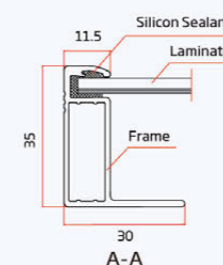


25 years warranty

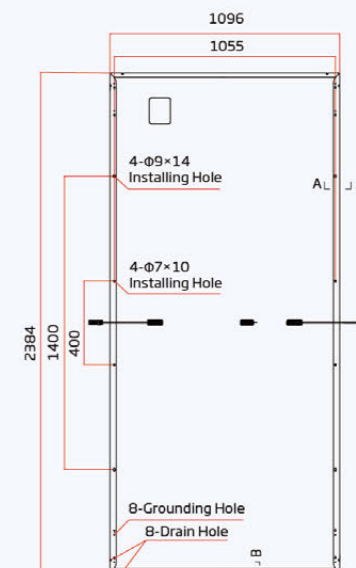
DIMENSIONS OF PV MODULE(mm)



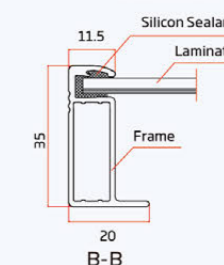
Front View



A-A

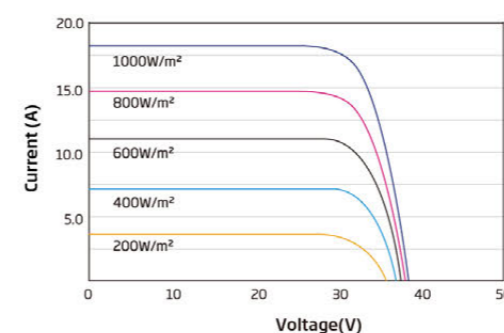


Back View

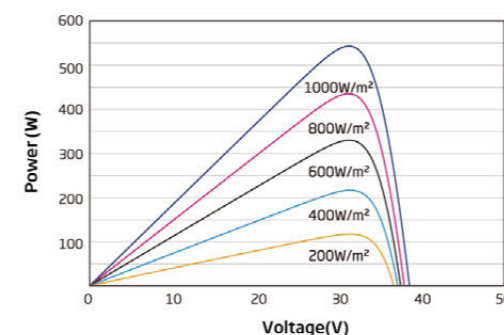


B-B

I-V CURVES OF PV MODULE(545W)



P-V CURVES OF PV MODULE(545W)



MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	110 cells
Module Dimensions	2384 × 1096 × 35 mm (93.86 × 43.15 × 1.38 inches)
Weight	28.6 kg (63.1 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Backsheet	White
Frame	35mm(1.38 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P _{MAX}	-0.34%/°C
Temperature Coefficient of V _{oc}	-0.25%/°C
Temperature Coefficient of I _{sc}	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40°C ~ +85°C
Maximum System Voltage	1500V DC (IEC)
	1500V DC (UL)
Max Series Fuse Rating	30A

WARRANTY

12 year Product Workmanship Warranty
25 year Power Warranty
2% first year degradation
0.55% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

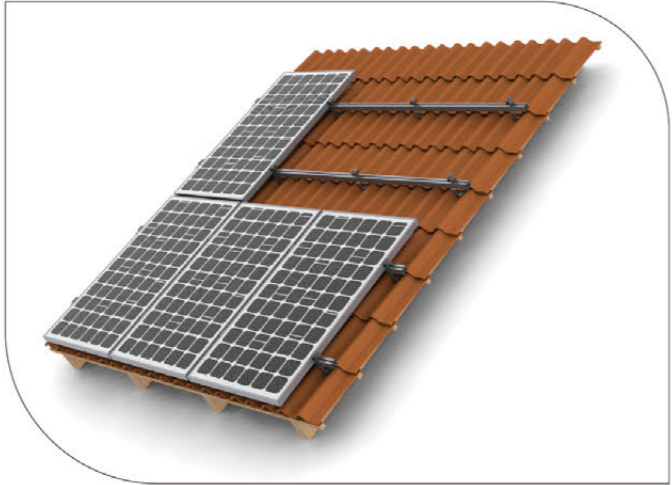
Modules per box:	31 pieces
Modules per 40' container:	620 pieces





Tile-on Roof System

Optimized design with wide range of usage, easy installation. The system uses roof hook to be fixed on the roof and mount the PV module by rail & clamps. The flexible design adopts to different roof structures and tile shapes.





















Product Features

- Widely used for both crystalline and thin film modules.
- Easy & quick installation.
- Only 4~5 kinds of components and no more than three kinds of tools in whole system fixation.
- All system components are made with high quality aluminum & stainless steel.

Technical Data

Project site	Sloped roof tile
Tile type	Tile type Wave, trapezoidal, and various upright side whipstitch forms of caigang watts
Slope of roof	On request
Roof specification	Frame / frameless module, crystalline/ thin film module
Installation type	Fixation on the roof
Module arrangement	Portrait \ Landscape
Module area square	Client requirement
Module area position	Client requirement
Roof structure	Client requirement
Loading section	Al6063 T5
Roof hook	Stainless steel
Small pieces	Stainless steel, Al6063 T5



Tile type	Part No. for roof hook	Tile type	Part No. for roof hook
 Hollow tile	 Roof hook C series VL01032 VL01115 VL01116 VL01112	 Scale tile	 Scale tile roof hook C1 VL01183
 Fla roof tile	 Roof hook CV series VZ00043	 Bitumen tile	 Asphalt tile roof hook C1 VL01184
 Standard tile		 Slate tile	
 Double slot tile		 Slate tile roof hook VZ00066	
 Roman tile	 Roof hook SP1 VZ00064	 Spanish tile	 Spanish tile roof hook VZ00068
 Plain tile	 Roof hook Z2 VL01113		



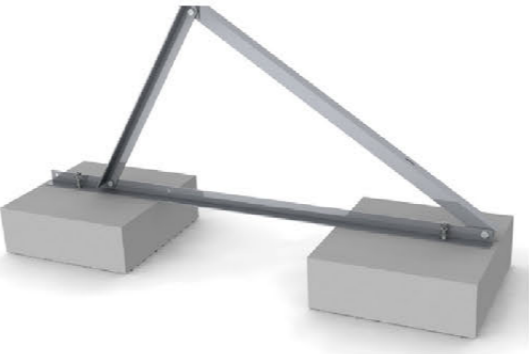
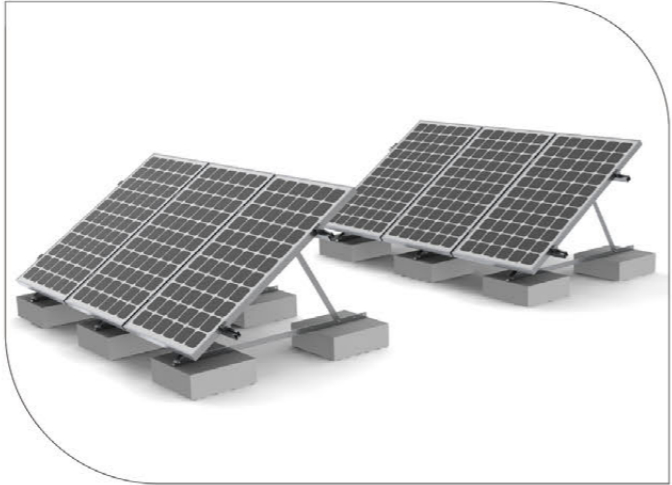
- 1 Fix roof hook on to the wooden beam with wood screw. Generally, three wood screws are enough.
- 2 Fix the aluminium rail to the roof hook with T-head bolt and flange nut.
- 3 Fasten the hex bolt when the module clamps and PV modules are located



Flat Roof System

Versolar system are being widely used in all kinds of flat roof according to the roof bearing capacity and waterproof requirements. Usually we adopt load way or chemical anchor bolt to fix the system on the roof.

Versolar chooses high quality material and good appearance, original design of connection between al-rail and module made the installation rapid. No second processing to the components are needed on site



1 Fix the triangular supporting frames on the concrete base.



2 Fix the rail on the triangular supporting frames with T-head bolt and flange nut.



3 Insert the end clamp and middle clamp into the slot of the rail. Then put the PV module onto the rail, and fasten the inner hex bolt to fix it.

Product Features

- Adoptable to all kinds of crystalline modules and certain thin film modules.
- Direct foundation bolt , concrete base or bear load are the possible solution for ground installation.
- System installation inclination is adjustable according to requirement.
- Easy installation, only three kinds of tools could finish the installation.

Technical Data

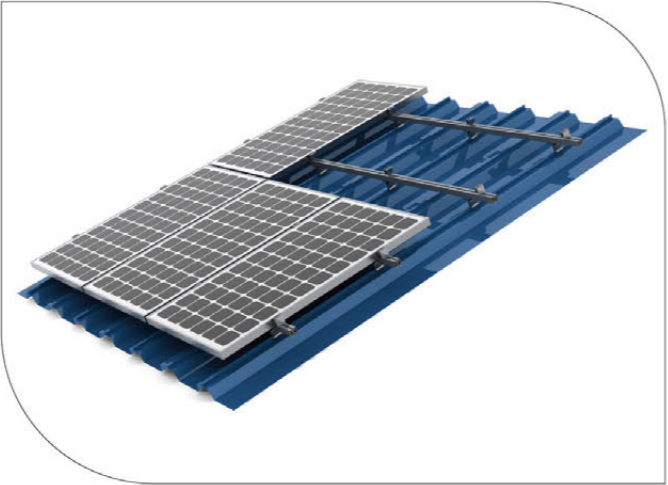
Insrallation site	Flat roof
Module specification	Frame / frameless module, silicon / film module
Installation inclination	Client requirement
Module arrangement	Portrait
Module area square	Client arrangement
Module area position	Client arrangement
Base frame	AL 6063T5 / stainless steel
Small pieces	Stainless steel, Al6063 T5





Metal Sheet Roof System

Metal sheet roof is regarded as one of the hard cores for roof mounting system. Suntime is able to solve the difficulty, by using matched clamp to fix the al-rail on the top of roof, minimizing the use of materials.



Product Features

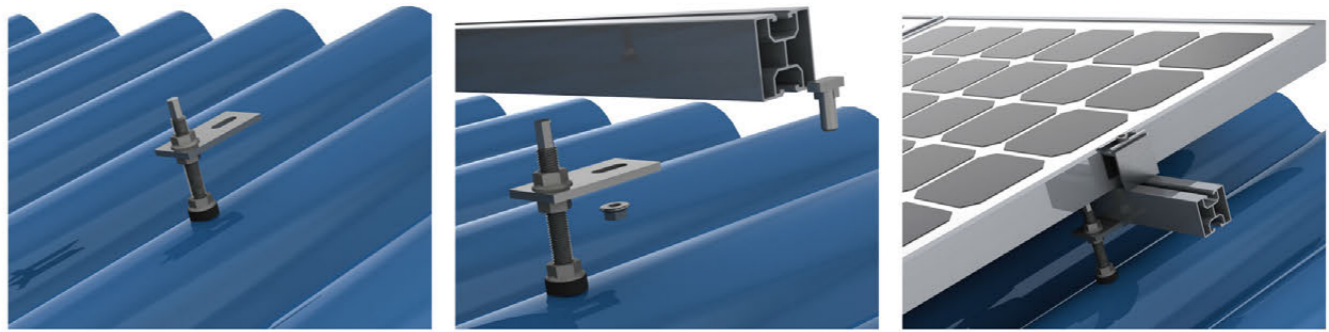
- Less piece of components and easy for installation.
- Design special clamp matching to the metal sheet shape and specification.
- Use super quality Al-alloy and stainless steel for components.
- Wide range of product line .

Technical Data

Installation site	Metal sheet roof
Slope of roof	Client requirement
Module specification	Frame / frameless module, crystalline/thin film module
Installation type	Parallel to the roof
Module arrangement	Portrait \ Landscape
Module area square	Client requirement
Module area position	Client requirement
Roof structure	Client requirement
Loading section	Al 6063 T5
Small pieces	Stainless steel, Al6063 T5

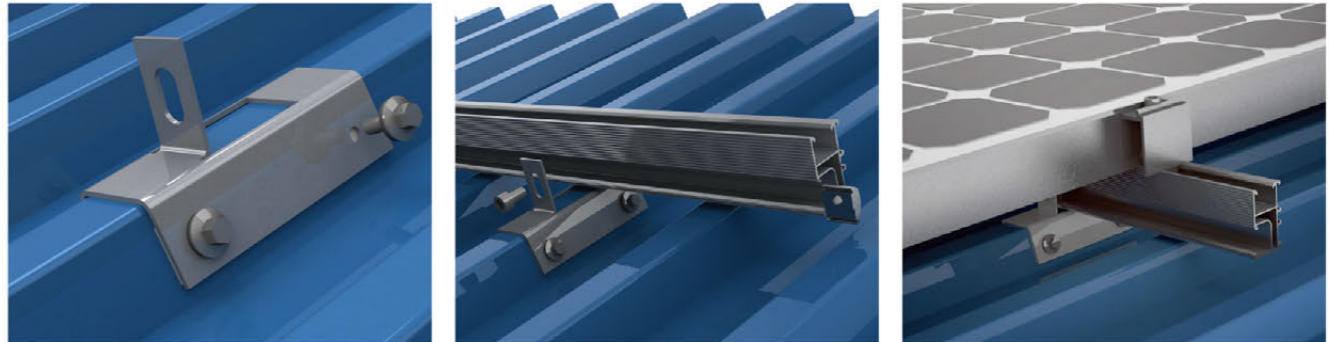


Corrugated Roof System Installation Tips



- 1 Drilling the located hole of the corrugated roof and the wood beam, then fasten the flange nut to fix the hanger bolt.
- 2 Insert the T-head bolt into the slot of the rail, and put the rail onto the hanger bolt, then fasten the flange nut to fix the rail.
- 3 Insert the end clamp and middle clamp into the slot of the rail. Then put the PV module onto the rail, and fasten the inner hex bolt to fix it.

Trapezoidal Roof System Installation Tips



- 1 Use four tapping screws to fix the trapezoidal bracket on the roof
- 2 Insert the eccentric nut into the slot of the rail, then fasten the inner hex bolt to fix the rail.
- 3 Insert the end clamp and middle clamp into the slot of the rail. Then put the PV module onto the rail, and fasten the inner hex bolt to fix it.

Standing Seam Roof System Installation Tips

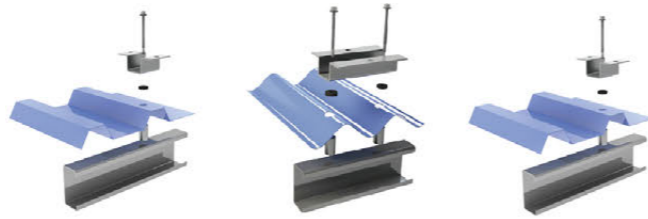


- 1 Put the pre-assembled clamp on to the standing seam roof, then fasten the flange nut.
- 2 Insert the T-head bolt into the slot of the rail, and put the rail onto the clamp, then fasten the flange nut to fix the rail.
- 3 Insert the end clamp and middle clamp into the slot of the rail. Then put the PV module onto the rail, and fasten the inner hex bolt to fix it.

Steel Beam or Wooden Beam

For steel beam-supporting bracket

Supporting bracket Z1 is mainly used for panels positioned parallel to roof or with a small angle. Z2 is a consequent further development of Z1, offering better fixation with two footings, more adaptable for tilted installation.



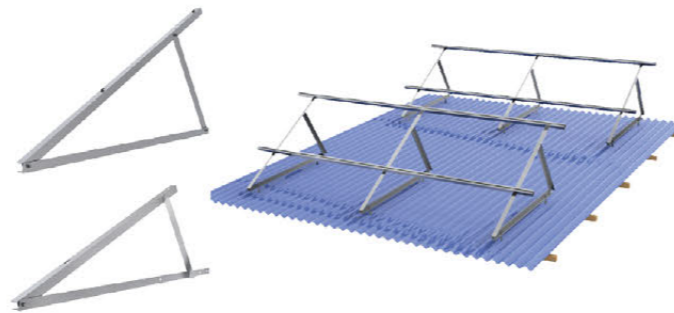
For wooden beam-hanger bolt

Hanger bolts are designed for roof with wooden substructure. It is used for installation parallel to roof or with a small angle. Several double threaded screw options are available to suit various site conditions and customers' requirements.



Triangular supporting frames

With triangular supporting frames, it's possible that modules will be installed with a certain angle to optimize the power of sunshine. Suntime offers triangular supporting frames in aluminum or galvanized steel. For Customized Size and Installation Angle, Please email to







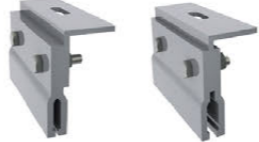





Various standing seam roof clamps

With triangular supporting frames, it's possible that modules will be installed with a certain angle to optimize the power of sunshine. Suntime offers triangular supporting frames in aluminum or galvanized steel. For Customized Size and Installation Angle, Please email to

Various standing seam roof clamps

Versolsolar providing all those widely used clamps for different installation solutions. We have test installation of all clamps in our factory to ensure it'll save your time and labor cost. Clamps made by Aluminum alloy or stainless steel with highly stability and a perfect fixation on the roof.

Choose the suitable clamp for the corresponding roof as showed in the following table.

Standing Seam Clamp	Roof Type	Standing Seam Clamp	Roof Type
			
			
			

3KW Single phase system

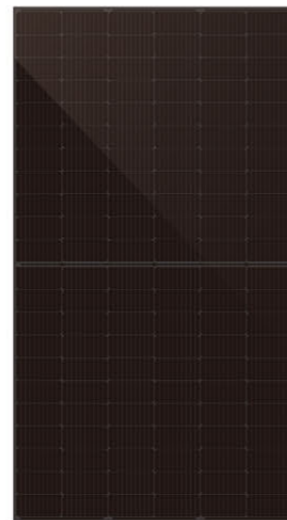


3KW Single-phase energy storage system

Component	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	single crystal 415W	8	piece	
DC String box	1 in 1 out(DC600V)	1	set	
On grid inverter	3KW	1	set	2/1+1
AC distribution box		1	set	
Connector	MC4	1	set	
DC cable	PV1-F4	100	meter	
AC cable	YJV22	100	meter	
Mounting Brackets		1	set	
Installation tool		1	set	

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

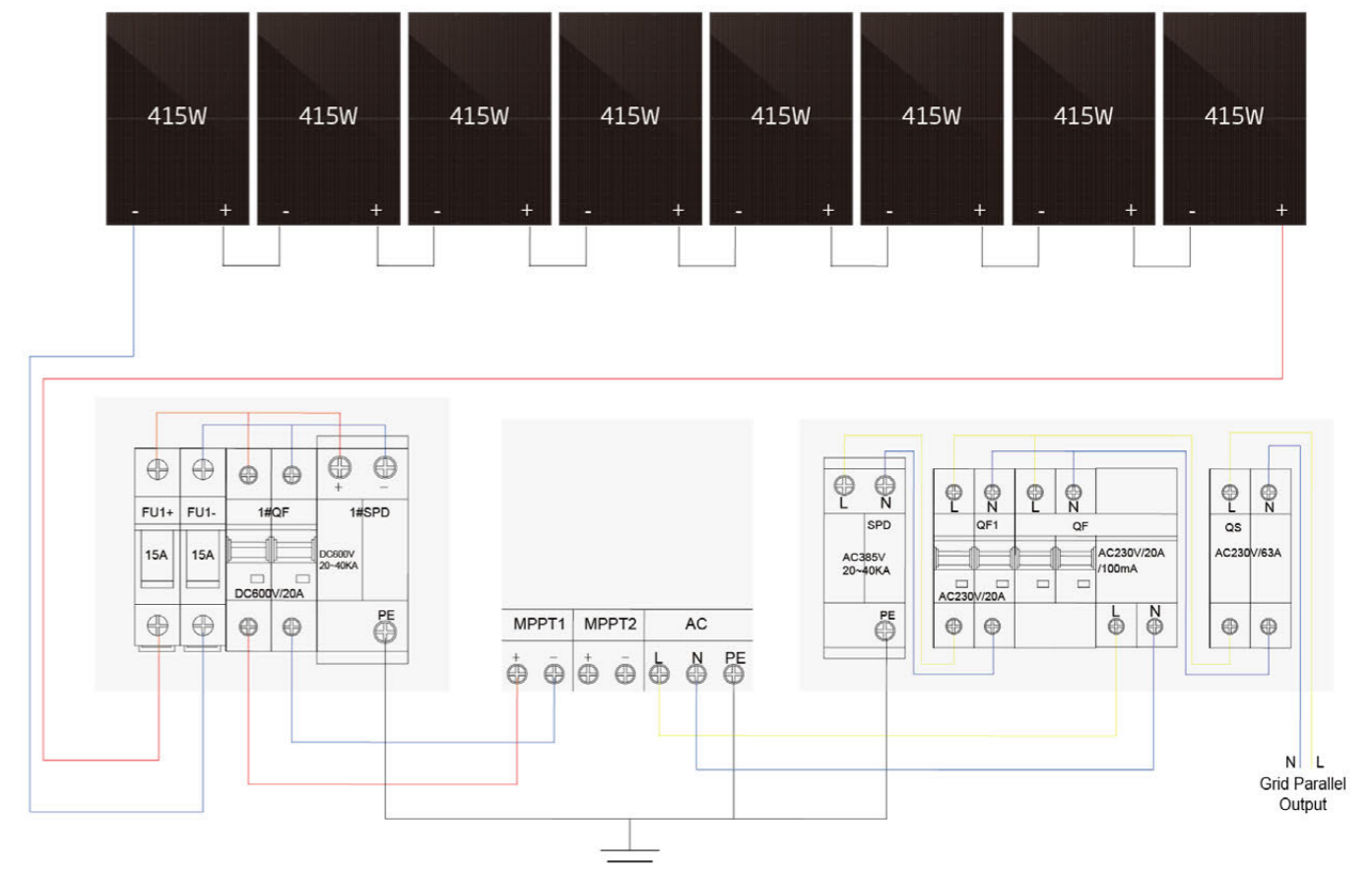


3KW Inverter

GROWATT inverter	MIN 3000TL-X
Max input DC power (W)	3500
Max input DC voltage (V)	550
Start-up voltage(V)	550
Rated voltage(V)	360
MPPT rated voltage range/rated input voltage (V)	80~550/360
Max input current of each string (A)	12.5
MPPT quantity/Number of MPPT strings	2/1+1
Rated AC output power(W)	2500
Max AC output power(VA)	2750
Max AC output current (A)	12
Rated output voltage/range(V)	230/160~300
Grid frequency/range(Hz)	50、60±5
Power factor	0.8 lead ~0.8 lag
THDi	<3%
AC connection type	L+N+PE



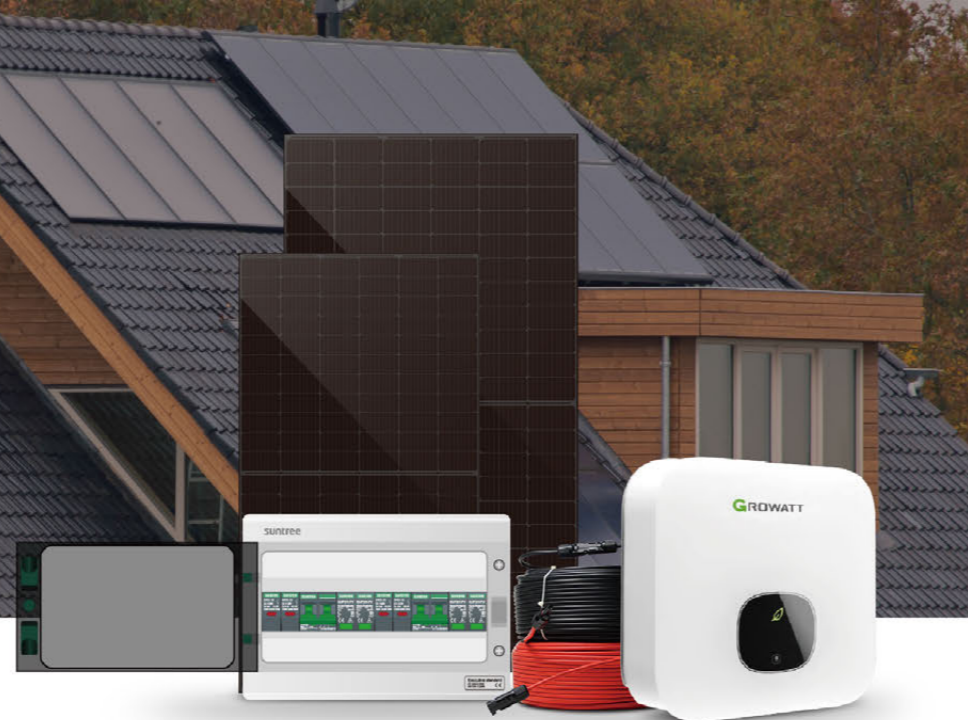
3KW Photovoltaic System Wiring Diagram





5KW Grid connected system
Schematic diagram

5KW Single phase system

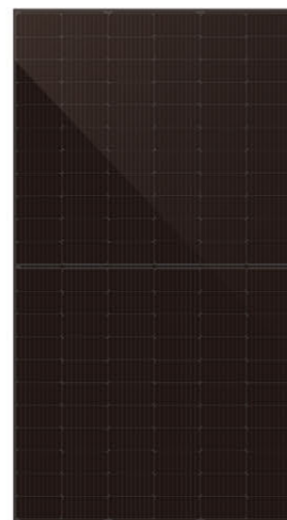


5KW Single-phase energy storage system

	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	single crystal 415W	13	piece	
DC String box	2 in 2 out(DC600V)	1	set	
On grid inverter	5KW	1	set	2/1+1
AC distribution box		1	set	
Connector	MC4	2	set	
DC cable	PV1-F4	100	meter	
AC cable	YJV22	100	meter	
Mounting Brackets		1	set	
Installation tool		1	set	

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

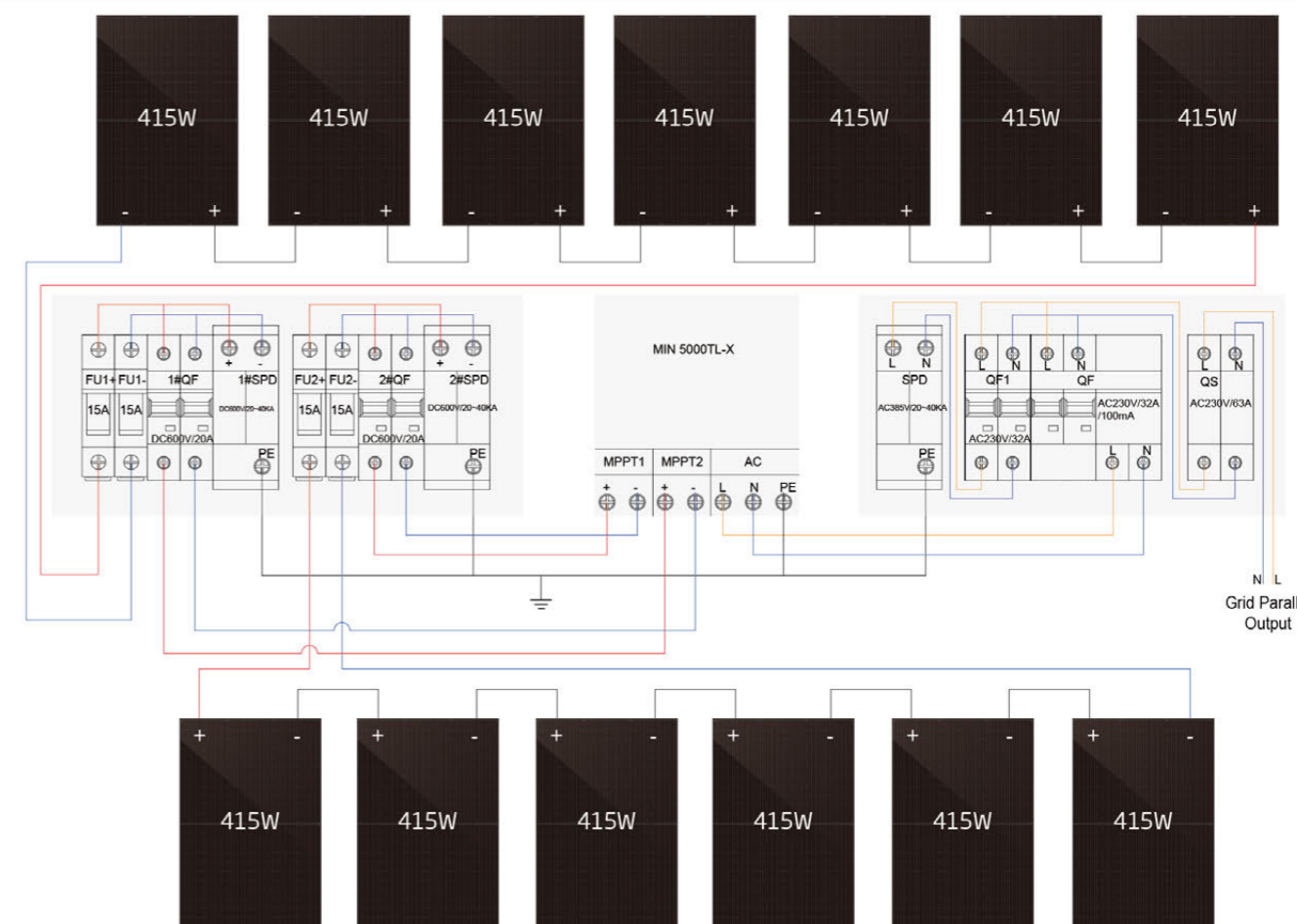


5KW Inverter

GROWATT inverter	MIN 5000TL-X
Max input DC power (W)	7000
Max input DC voltage (V)	550
Start-up voltage(V)	550
Rated voltage(V)	360
MPPT rated voltage range/rated input voltage (V)	80~550/360
Max input current of each string (A)	12.5
MPPT quantity/Number of MPPT strings	2/1+1
Rated AC output power(W)	5000
Max AC output power(VA)	5000
Max AC output current (A)	23.9
Rated output voltage/range(V)	230/160~300
Grid frequency/range(Hz)	50、60/±5
Power factor	0.8 lead ~0.8 lag
THDi	<3%
AC connection type	L+N+PE



5KW Photovoltaic System Wiring Diagram



6KW Single phase system

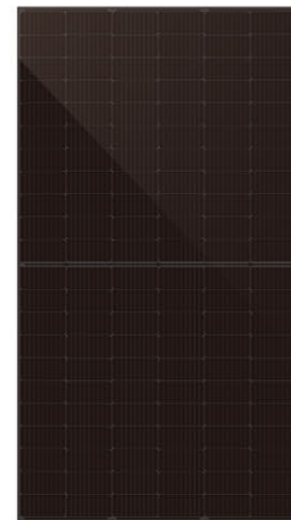


6KW Single-phase energy storage system

	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	single crystal 415W	15	piece	
DC String box	2 in 2 out(DC600V)	1	set	
On grid inverter	6KW	1	set	2/1+1
AC distribution box		1	set	
Connector	MC4	1	set	
DC cable	PV1-F4	100	meter	
AC cable	YJV22	100	meter	
Mounting Brackets		1	set	
Installation tool		1	set	

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A



6KW Inverter

GROWATT inverter	MIN 6000TL-X
Max input DC power (W)	8100W
Max input DC voltage (V)	550V
Start-up voltage(V)	550V
Rated voltage(V)	360V
MPPT rated voltage range/rated input voltage (V)	80~550V/360V
Max input current of each string (A)	12.5A
MPPT quantity/Number of MPPT strings	2/1+1
Rated AC output power(W)	6000W
Max AC output power(VA)	6600VA
Max AC output current (A)	28.7A
Rated output voltage/range(V)	230V/160~300V
Grid frequency/range(Hz)	50Hz~ 60Hz±5Hz
Power factor	0.8 lead ~0.8 lag
THDi	<3%
AC connection type	L+N+PE



6KW Photovoltaic System Wiring Diagram





8KW Three phase

Grid connected system Schematic diagram

8KW three-phase system

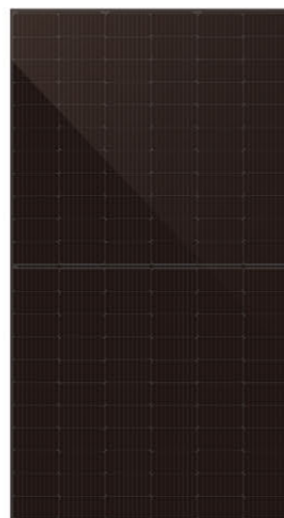


8KW Three-phase energy storage system

Component	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	single crystal 415W	20	piece	
DC String box	1 in 1 out(DC1000V)	1	set	
On grid inverter	10KW	1	set	2/1+1
AC distribution box		1	set	
Connector	MC4	1	set	
DC cable	PV1-F4	100	meter	
AC cable	YJV22	100	meter	
Mounting Brackets		1	set	
Installation tool		1	set	

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

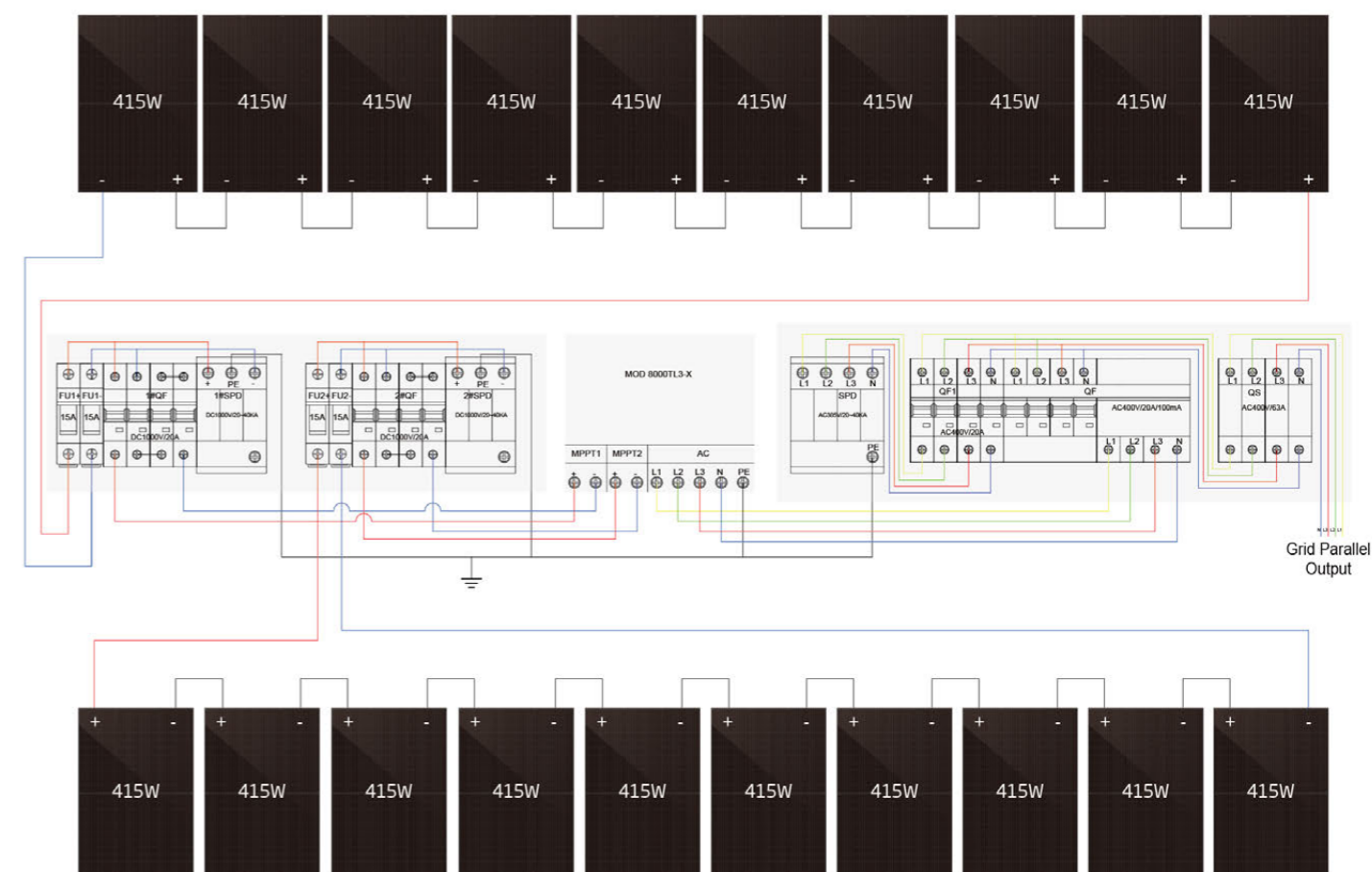


8KW Inverter

GROWATT inverter	MOD 10KTL3-X
Max input DC power (W)	15000W
Max input DC voltage (V)	1100V
Start-up voltage(V)	200V
MPPT rated voltage range/rated input voltage (V)	140~1000/580V
Max input current of each string (A)	13A
MPPT quantity/Number of MPPT strings	2/1+1
Rated AC output power(W)	10000W
Max AC output power(VA)	11000VA
Max AC output current (A)	16.7A
Rated output voltage/range(V)	400/310~476A
Grid frequency/range(Hz)	50Hz、60Hz±5Hz
Power factor	0.8 lead ~0.8 lag
THDi	<3%
AC connection type	3W+N+PE



8KW Photovoltaic System Wiring Diagram



8KW

Single phase system

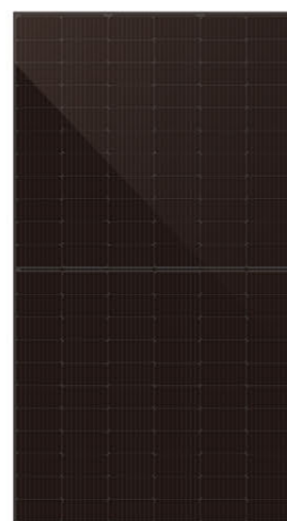


8KW Single-phase energy storage system

Component	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	single crystal 415W	20	piece	
DC String box	2 in 2 out(DC600V)	1	set	
On grid inverter	8KW	1	set	2/1+1
AC distribution box		1	set	
Connector	MC4	2	set	
DC cable	PV1-F4	100	meter	
AC cable	YJV22	100	meter	
Mounting Brackets		1	set	
Installation tool		1	set	

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

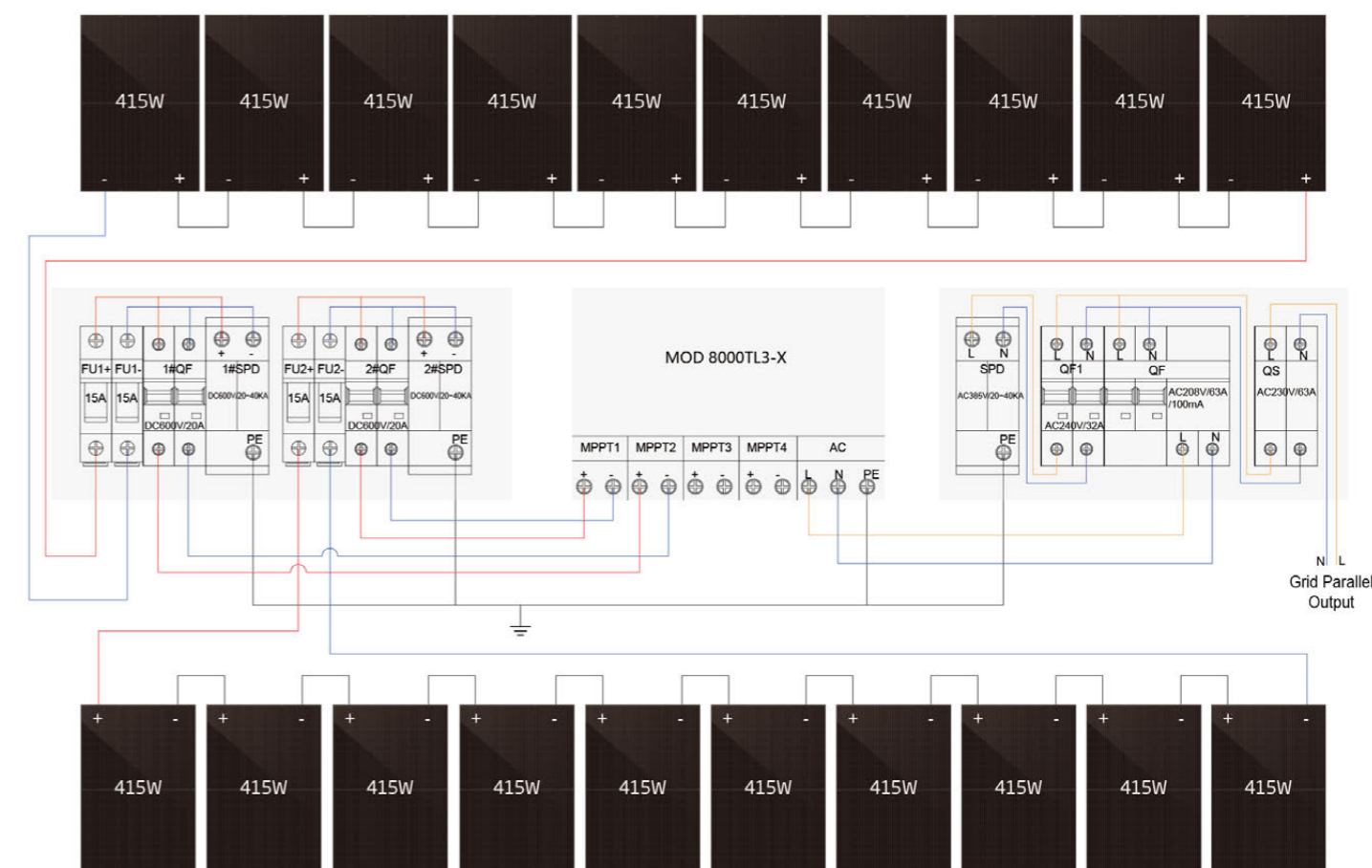


8KW Inverter

GROWATT inverter	MOD 8000TL3-X
Max input DC power (W)	12000W
Max input DC voltage (V)	1100V
Start-up voltage(V)	200V
MPPT rated voltage range/rated input voltage (V)	140~1000/580V
Max input current of each string (A)	13A
MPPT quantity/Number of MPPT strings	2/1+1
Rated AC output power(W)	8000W
Max AC output power(VA)	8800VA
Max AC output current (A)	13.3A
Rated output voltage/range(V)	400/310~476A
Grid frequency/range(Hz)	50、60/±5Hz
Power factor	0.8 lead ~0.8 lag
THDi	<3%
AC connection type	L+N+PE



8KW Photovoltaic System Wiring Diagram



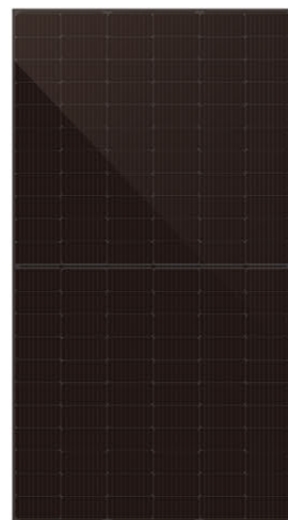
10KW Three-phase system

10KW Three-phase System

Component	Model	QUANTITY	UNIT	MPPT/ INTERFACE
Component	single crystal 415W	25	piece	/
DC String box	2 in 2 out/(DC1000V)	1	set	/
On grid inverter	10KW	1	set	2/1+1
AC distribution box	/	1	set	/
Connector	MC4	1	set	/
DC cable	PV1-F4	/	meter	/
AC cable	YJV22-	/	meter	/
Mounting Brackets	/	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

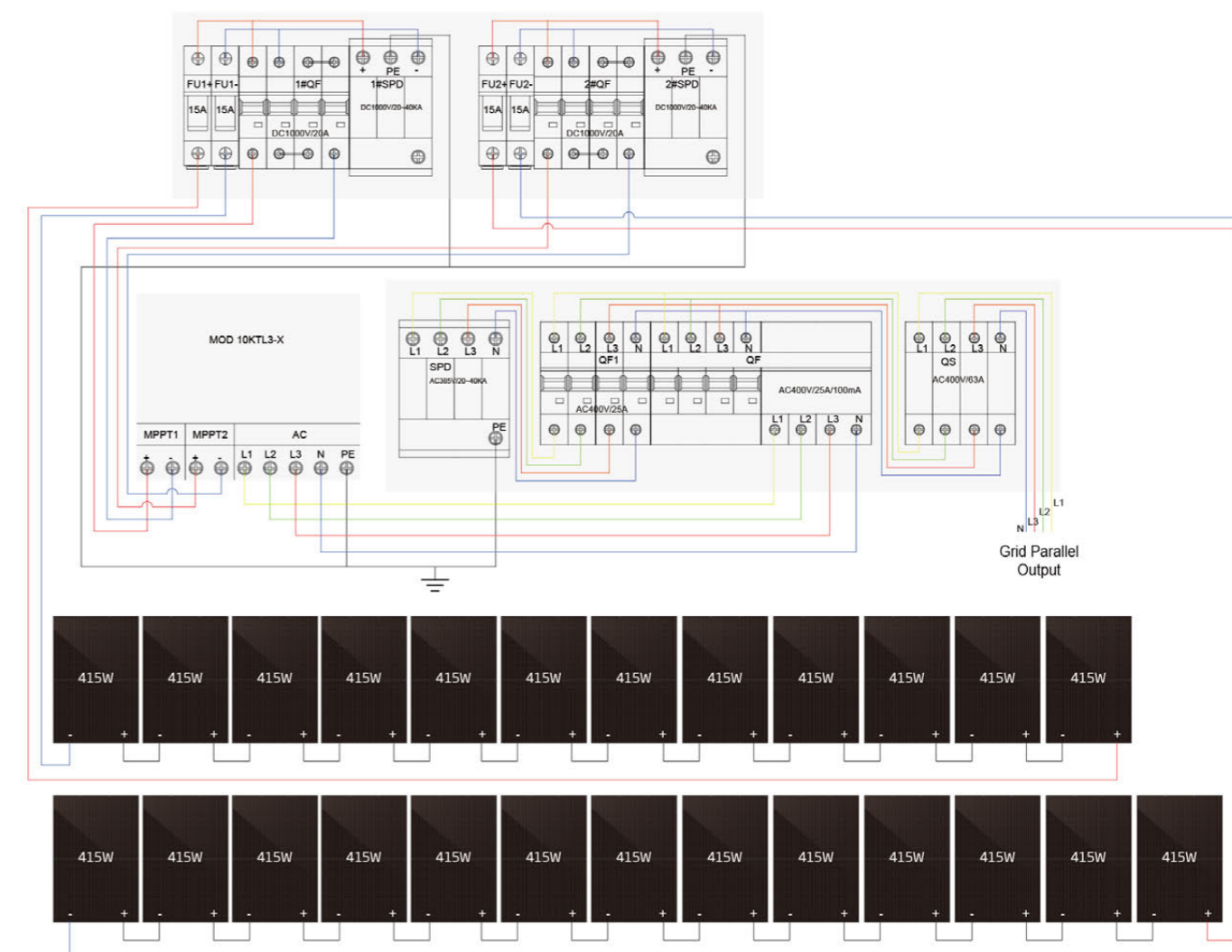


10KW inverter

GROWATT inverter	MOD 10KTL3-X
Max input DC power (W)	15000W
Max input DC voltage (V)	1100V
Start-up voltage(V)	200V
MPPT rated voltage range/rated input voltage (V)	140~1000/580V
Max input current of each string (A)	13A
MPPT quantity/Number of MPPT strings	2/1+1
Rated AC output power(W)	10000W
Max AC output power(VA)	11000VA
Max AC output current (A)	16.7A
Rated output voltage/range(V)	400/310~476A
Grid frequency/range(Hz)	50Hz, 60Hz±5Hz
Power factor	0.8 lead ~0.8 lag
THDi	< 3%
AC connection type	3W+N+PE



10KW Photovoltaic System Wiring Diagram



15KW Three-phase system

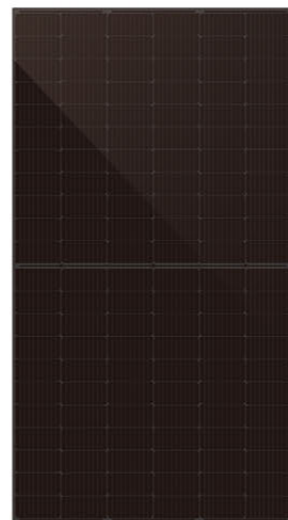


15KW Three-phase System

	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	Single crystal 415W	37	piece	/
DC String box	2 in 2 out/(DC1000V)	1	set	/
On grid inverter	15KW	1	set	2/2+1
AC distribution box	/	1	set	/
Connector	MC4	2	set	/
DC cable	PV1-F4	/	meter	/
AC cable	YJV22-	/	meter	/
Mounting Brackets	/	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

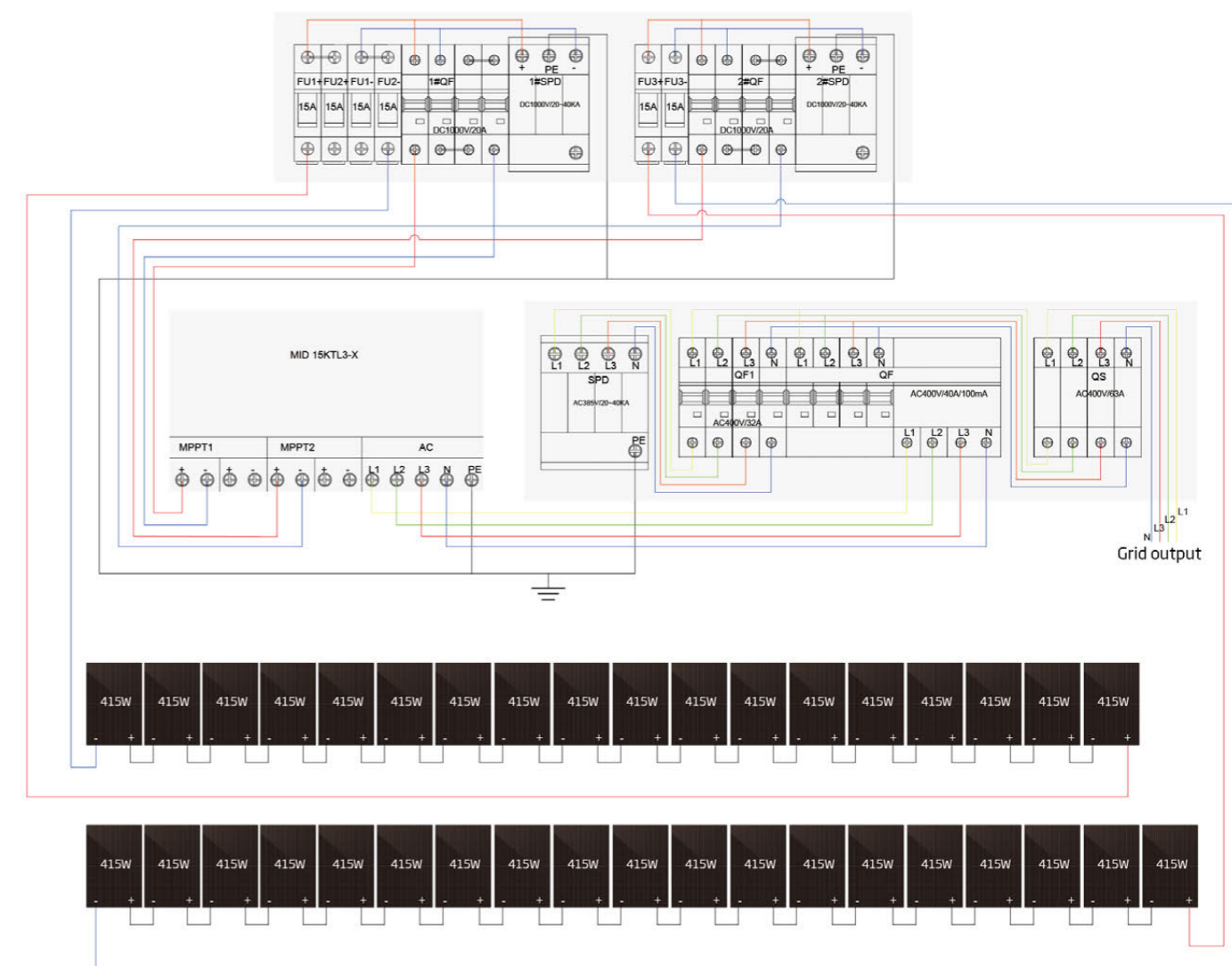


15KW INVERTER

GROWATT INVERTER	MOD 15KTL3-X
Max input DC power (W)	22500W
Max input DC voltage (V)	1100V
Start-up voltage(V)	200V
MPPT rated voltage range/rated input voltage (V)	140~1000/580V
Max input current of each string (A)	13A
MPPT quantity/Number of MPPT strings	2/2+1
Rated AC output power(W)	15000W
Max AC output power(VA)	16500VA
Max AC output current (A)	25A
Rated output voltage/range(V)	400/310~476A
Grid frequency/range(Hz)	50Hz, 60Hz±5Hz
Power factor	0.8 lead ~0.8 lag
THDi	< 3%
AC connection type	3W+N+PE



15KW PHOTOVOLTAIC SYSTEM WIRING DIAGRAM



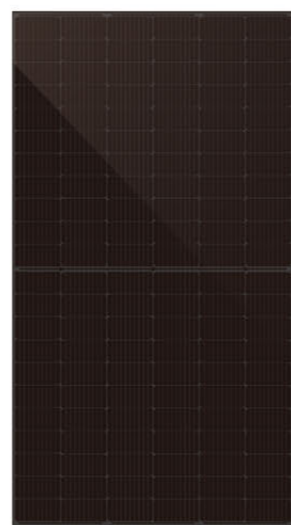
20KW Three-phase system

20KW Three-phase System

	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	Single crystal 415W	49	piece	/
DC String box	3 in 3 out(DC1000V)	1	set	/
On grid inverter	20KW	1	set	2/2+2
AC distribution box	/	1	set	/
Connector	MC4	3	set	/
DC cable	PV1-F4	/	meter	/
AC cable	YJV22-	/	meter	/
Mounting Brackets	/	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

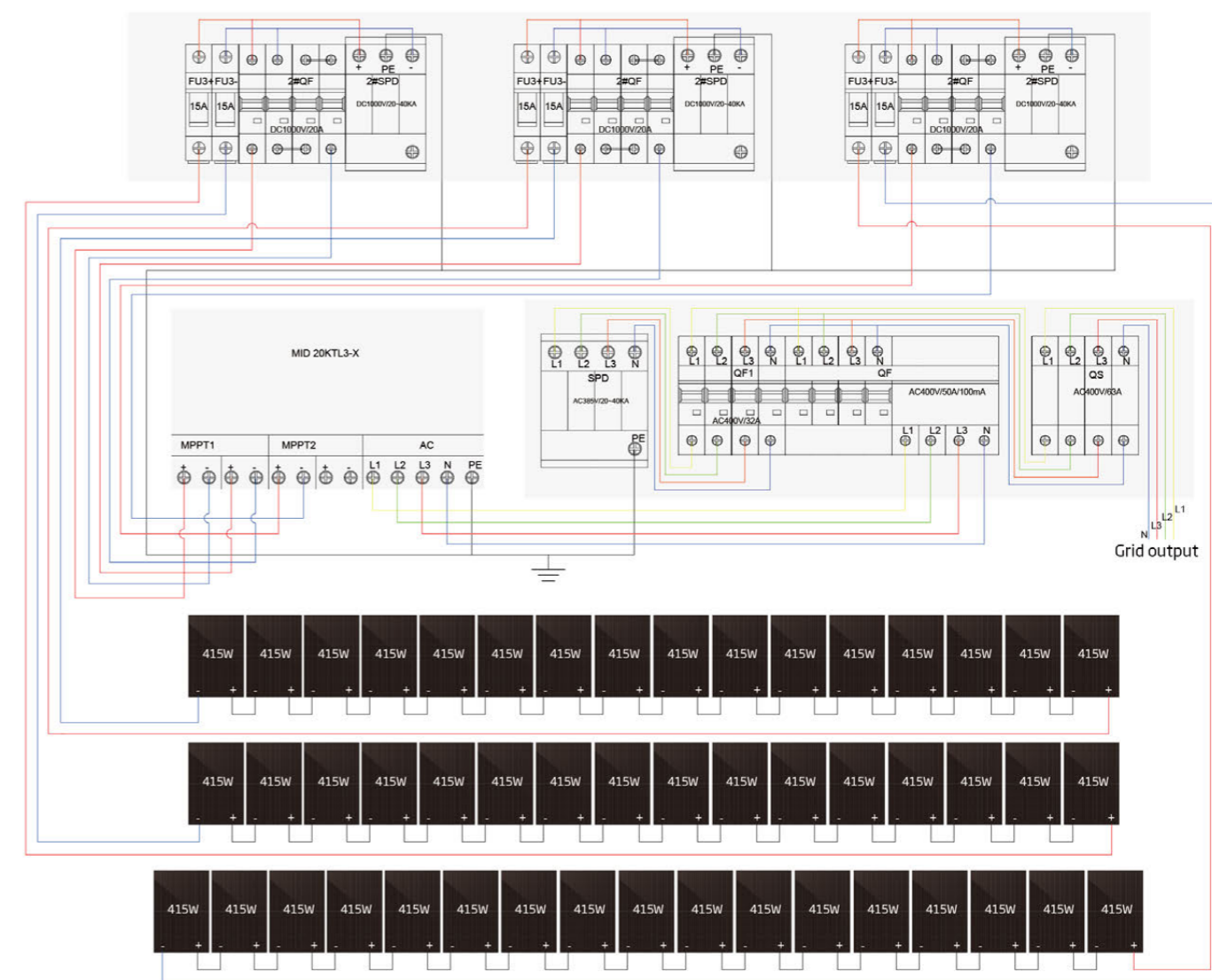


20KW Inverter

GROWATT INVERTER	MOD 20KTL3-X
Max input DC power (W)	26000W
Max input DC voltage (V)	1100V
Start-up voltage(V)	200V
MPPT rated voltage range/rated input voltage (V)	140~1000/580V
Max input current of each string (A)	13A
MPPT quantity/Number of MPPT strings	2/2+1
Rated AC output power(W)	15000W
Max AC output power(VA)	16500VA
Max AC output current (A)	25A
Rated output voltage/range(V)	400/310~476A
Grid frequency/range(Hz)	50Hz, 60Hz±5Hz
Power factor	0.8 lead ~0.8 lag
THDi	< 3%
AC connection type	3W+N+PE



20KW PHOTOVOLTAIC SYSTEM WIRING DIAGRAM



25KW Three Phase System

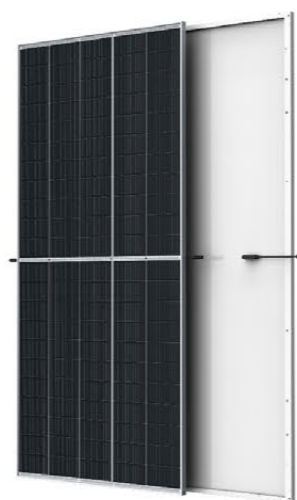


25KW Three-phase System

	MODEL	QUANTITY	UNIT	MPPT / INTERFACE
Component	Single crystal 545W	46	piece	/
DC String box	2 in 2 out(DC1000V)	1	set	/
On grid inverter	25KW	1	set	3/2
AC distribution box	/	1	set	/
Connector	MC4	4	set	/
DC cable	PV1-F4	/	meter	/
AC cable	YJV22-	/	meter	/
Mounting Brackets	/	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE19
Max Power	545W
Power tolerance	0~+5W
MTTP working voltage	31.7V
MTTP working current	17.37A
Open-circuit voltage	37.7V
Short-circuit current	18.47A
Module efficiency	20.9%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	2384*1096*35mm
Weight	28.6KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 280mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

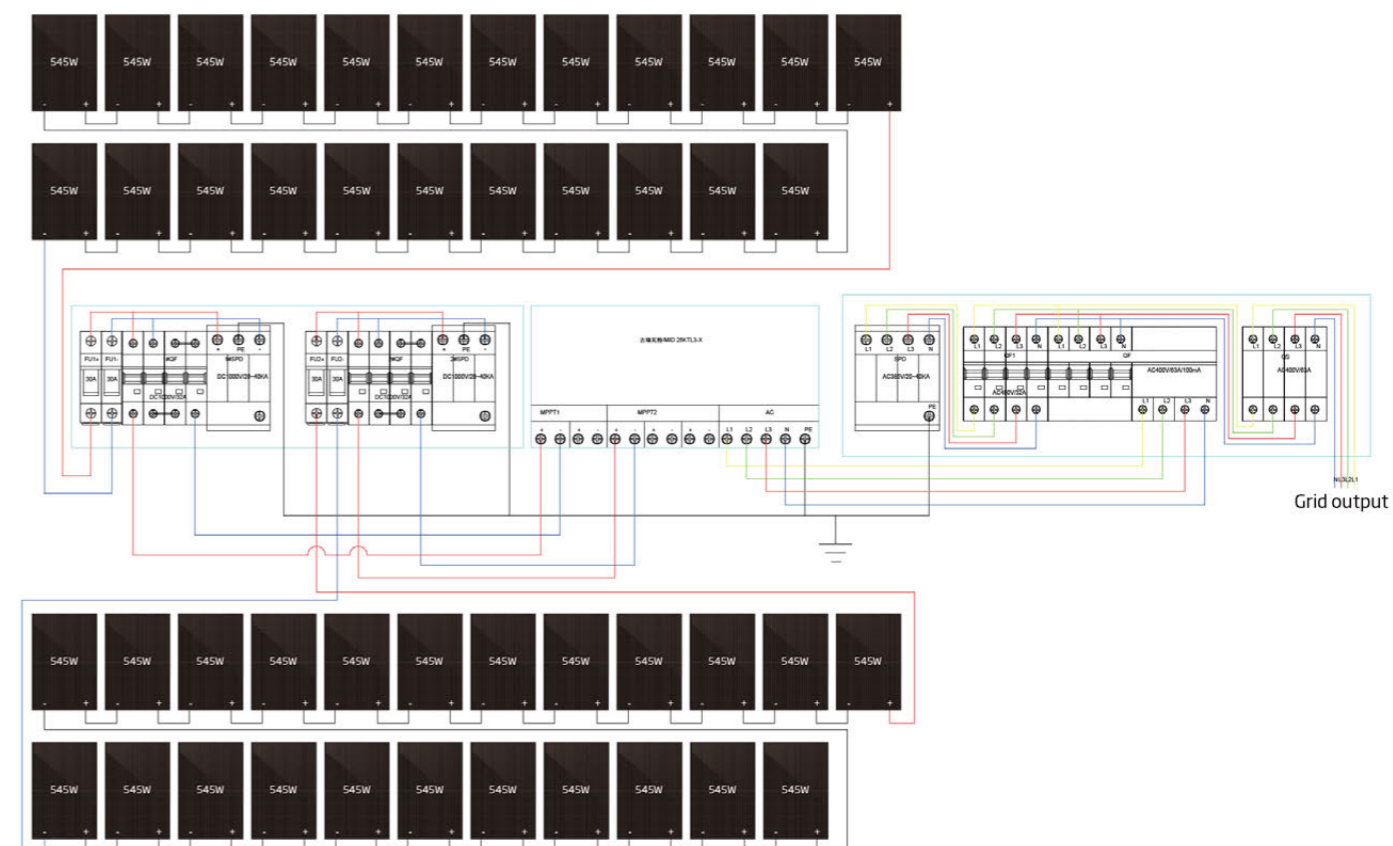


25KW Inverter

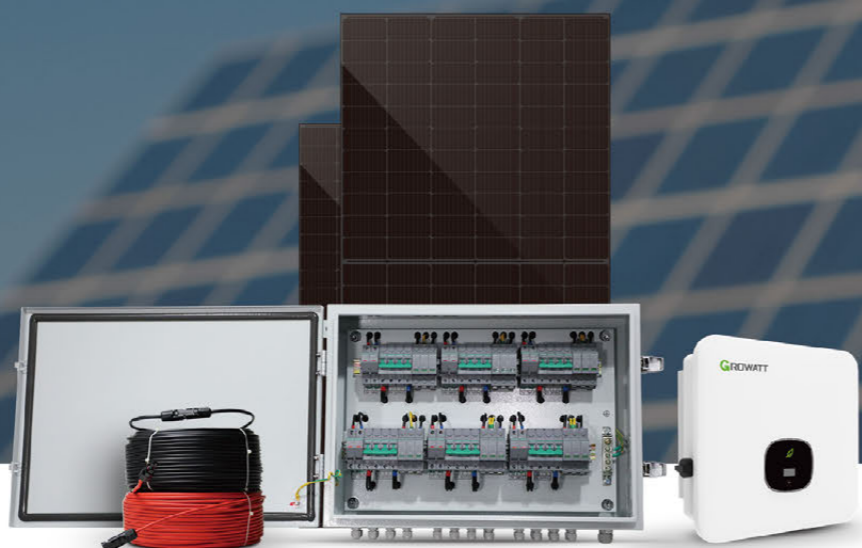
GROWATT INVERTER	MOD 25KTL3-X
Max input DC power (W)	32500W
Max input DC voltage (V)	1100V
Start-up voltage(V)	250V
MPPT rated voltage range/rated input voltage (V)	200~1000/580V
Max input current of each string (A)	13.5A
MPPT quantity/Number of MPPT strings	2/2+3
Rated AC output power(W)	25000W
Max AC output power(VA)	25000VA
Max AC output current (A)	36.2A
Rated output voltage/range(V)	400/340~440V
Grid frequency/range(Hz)	50Hz, 60Hz±5Hz
Power factor	0.8 lead ~0.8 lag
THDi	< 3%
AC connection type	3W+N+PE



25KW PHOTOVOLTAIC SYSTEM WIRING DIAGRAM



25KW Three Phase System

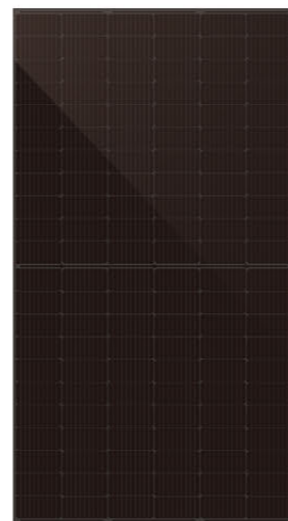


25KW Three-phase System

Component	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	Single crystal 415W	62	piece	/
DC String box	4 in 4 out(DC1000V)	1	set	/
On grid inverter	25KW	1	set	2/2+3
AC distribution box	/	1	set	/
Connector	MC4	4	set	/
DC cable	PV1-F4	/	meter	/
AC cable	YJV22-	/	meter	/
Mounting Brackets	/	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

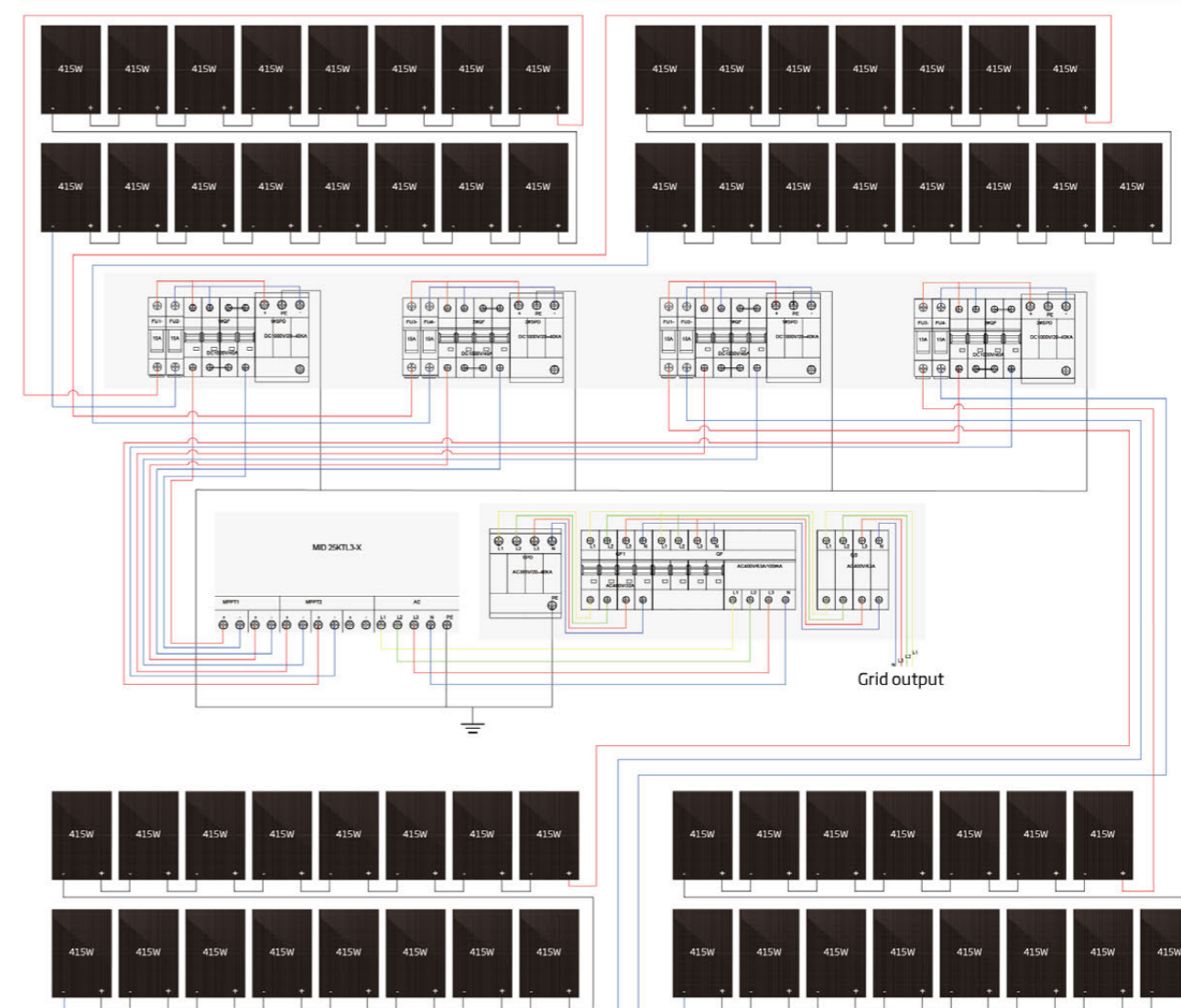


25KW Inverter

GROWATT INVERTER	MOD 25KTL3-X
Max input DC power (W)	26000W
Max input DC voltage (V)	1100V
Start-up voltage(V)	200V
MPPT rated voltage range/rated input voltage (V)	140~1000/580V
Max input current of each string (A)	13A
MPPT quantity/Number of MPPT strings	2/2+1
Rated AC output power(W)	15000W
Max AC output power(VA)	16500VA
Max AC output current (A)	25A
Rated output voltage/range(V)	400/310~476A
Grid frequency/range(Hz)	50Hz, 60Hz±5Hz
Power factor	0.8 lead ~0.8 lag
THDi	< 3%
AC connection type	3W+N+PE



25KW PHOTOVOLTAIC SYSTEM WIRING DIAGRAM



30KW Three Phase System

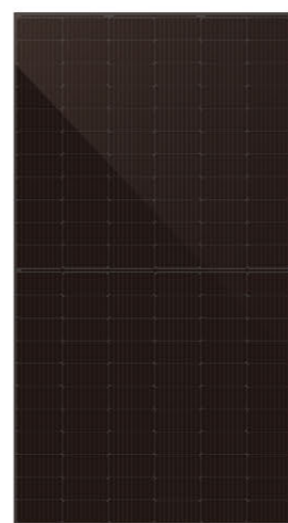


30KW Three-phase System

	MODEL	QUANTITY	UNIT	MPPT / INTERFACE
Component	Single crystal 415W	73	piece	/
DC String box	4 in 4 out(DC1000V)	1	set	/
On grid inverter	30KW	1	set	3/2
AC distribution box	/	1	set	/
Connector	MC4	6	set	/
DC cable	PV1-F4	/	meter	/
AC cable	YJV22-	/	meter	/
Mounting Brackets	/	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A



30KW Inverter

GROWATT INVERTER	MOD 25KTL3-X
Max input DC power (W)	26000W
Max input DC voltage (V)	1100V
Start-up voltage(V)	200V
MPPT rated voltage range/rated input voltage (V)	140~1000/580V
Max input current of each string (A)	13A
MPPT quantity/Number of MPPT strings	2/2+1
Rated AC output power(W)	15000W
Max AC output power(VA)	16500VA
Max AC output current (A)	25A
Rated output voltage/range(V)	400/310~476A
Grid frequency/range(Hz)	50Hz, 60Hz±5Hz
Power factor	0.8 lead ~0.8 lag
THDi	< 3%
AC connection type	3W+N+PE



30KW PHOTOVOLTAIC SYSTEM WIRING DIAGRAM





Residential

Energy storage system
diagram

3KW Single-phase energy storage system

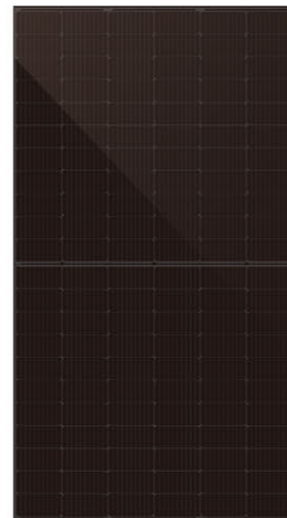


3KW Single-phase energy storage system

Component	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	single crystal 415W	8	piece	/
DC String box	1 in 1 out /(DC600V)	1	set	/
Battery Storage Inverter	SPH3000TL BL-UP(3KW)	1	set	2/1+1
AC distribution box	/	1	set	/
Battery protection box	/	1	set	/
Connector	MC4	1	set	/
DC cable	PV1-F4	100	meter	/
Battery connection cable	BVR-	10	meter	/
AC cable	YJV22-	100	meter	/
Mounting Brackets	/	1	set	/
Battery pack	48V/3KWH	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

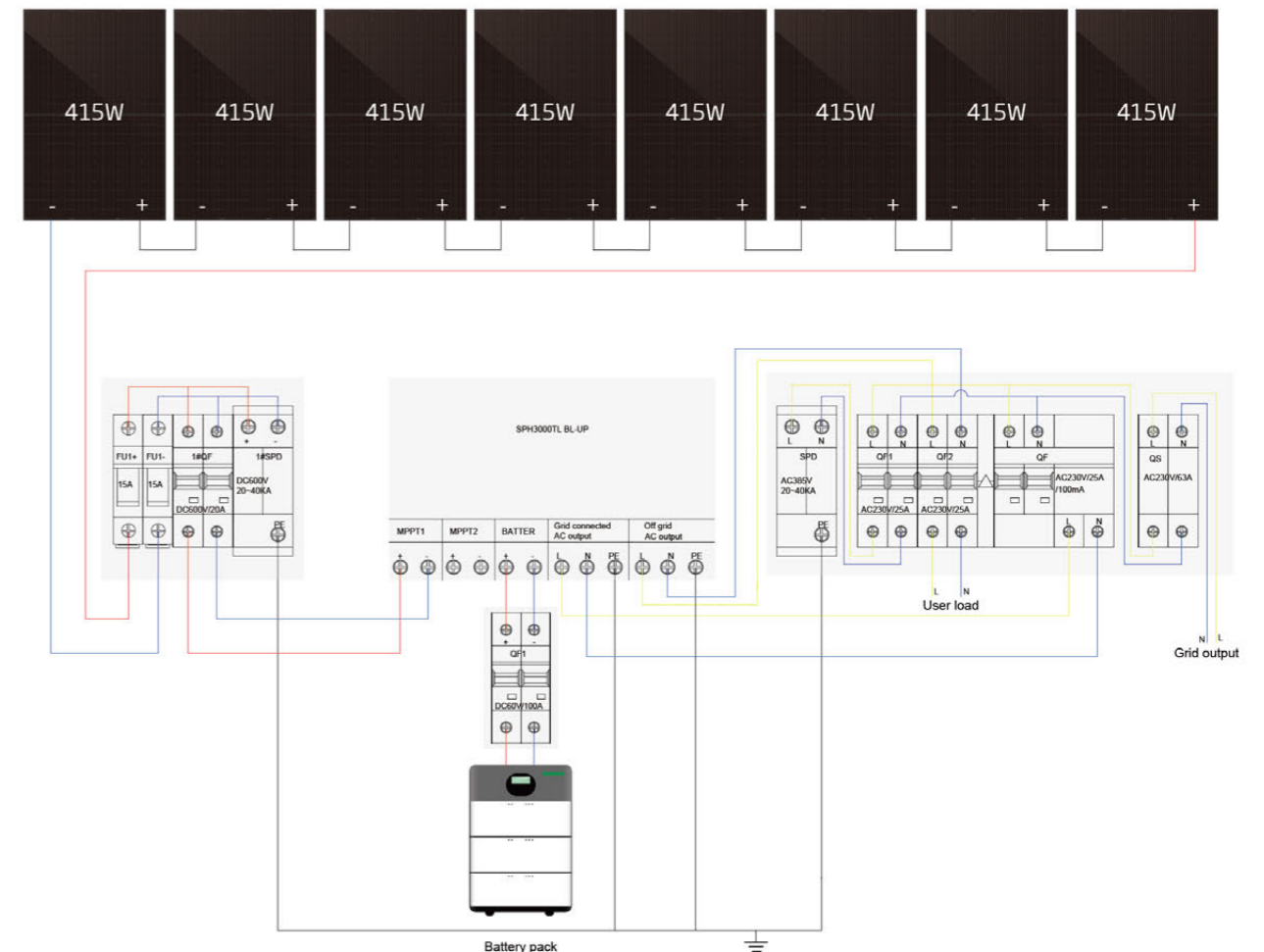


3KW Inverter

GROWATT INVERTER	SPH3000TL BL-UP
Max input DC power (W)	6000W
Max input DC voltage (V)	550V
Start-up voltage(V)	120V
Rated voltage(V)	360V
MPPT rated voltage range/rated input voltage (V)	120-550V
MPPT quantity	2
Number of MPPT strings	1
Max input current of each string (A)	13.5A
Maximum short circuit current of each MPPT	16.5A
Rated AC output power(W)	3000W
Rated voltage (range)	230V/(180Vac-270Vac)
Rated frequency (range)	50Hz/60Hz (45Hz-55Hz/55Hz-65Hz)
Maximum output current	16A
Power factor	0.8 lead ~0.8 lag
THDi	<3%
AC connection type	L+N+PE



Wiring diagram of 3KW energy storage system



5KW Single-phase energy storage system



5KW Single-phase energy storage system

MODEL	QUANTITY	UNIT	MPPT/ INTERFACE	
Component	single crystal 415W	13	piece	/
DC String box	2 in 2 out /(DC600V)	1	set	/
Battery Storage Inverter	SPH5000TL BL-UP(5KW)	1	set	2/1+1
AC distribution box	/	1	set	/
Battery protection box	/	1	set	/
Connector	MC4	2	set	/
DC cable	PV1-F4	100	meter	/
Battery connection cable	BVR-	10	meter	/
AC cable	YJV22-	100	meter	/
Mounting Brackets	/	1	set	/
Battery pack	48V/5KWH	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

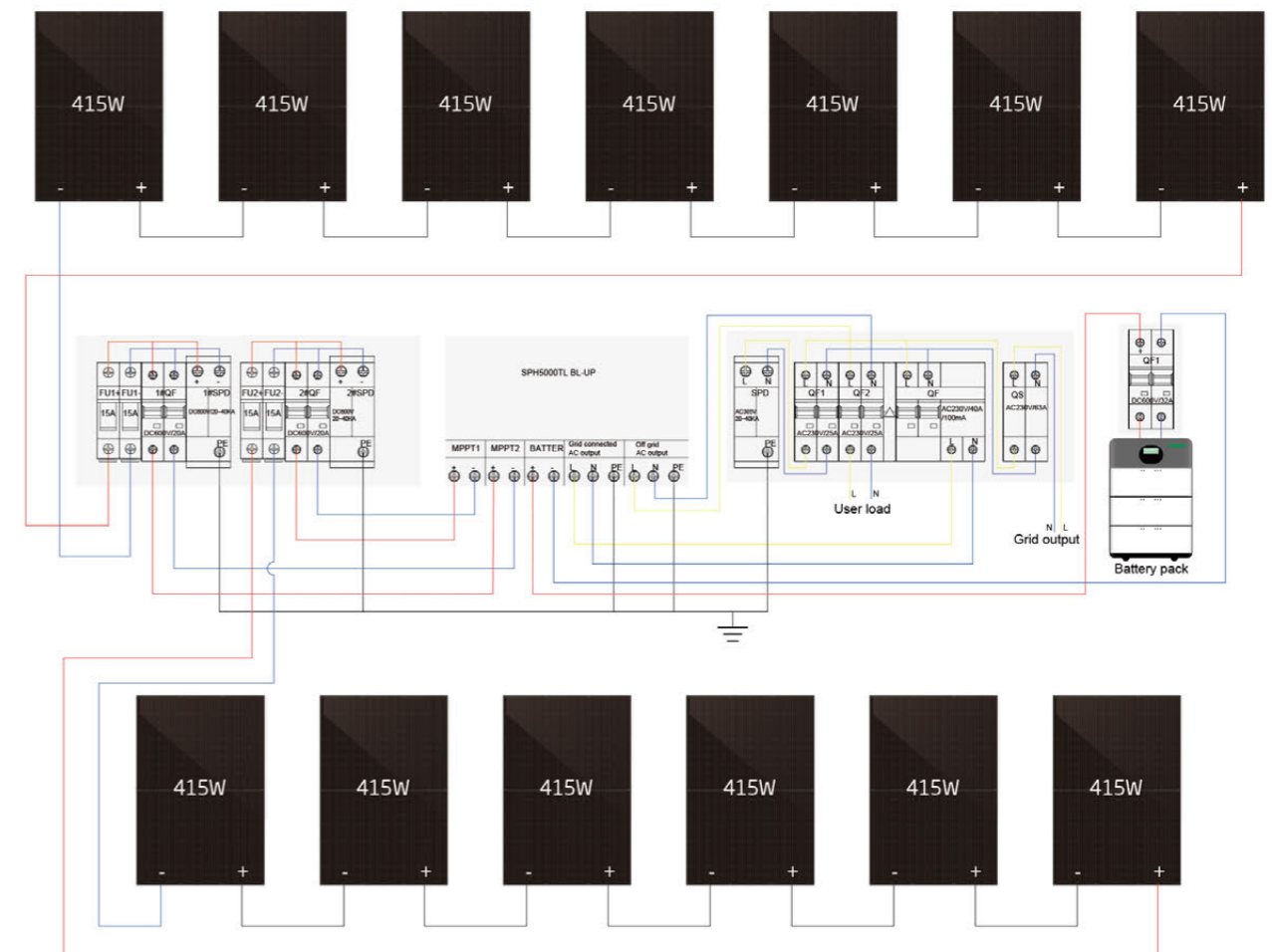


5KW Inverter

GROWATT INVERTER	SPH5000TL BL-UP
Max input DC power (W)	10500W
Max input DC voltage (V)	550V
Start-up voltage(V)	120V
Rated voltage(V)	360V
MPPT rated voltage range/rated input voltage (V)	120-550V
MPPT quantity	2
Number of MPPT strings	1
Max input current of each string (A)	13.5A
Maximum short circuit current of each MPPT	16.5A
Rated AC output power(W)	5000W
Rated voltage (range)	230V/(180Vac-270Vac)
Rated frequency (range)	50Hz/60Hz (45Hz-55Hz/55Hz-65Hz)
Maximum output current	27A
Power factor	0.8 lead ~0.8 lag
THDi	<3%
AC connection type	L+N+PE



Wiring diagram of 5KW energy storage system



5KW Three-phase energy storage system

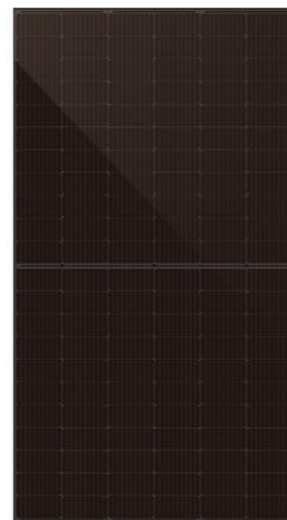


5KW Three-phase energy storage system

	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	single crystal 415W	13	piece	/
DC String box	2 in 2 out //(DC1000V)	1	set	/
Battery Storage Inverter	SPH5000TL BL-UP(5KW)	1	set	2/1+1
AC distribution box	/	1	set	/
Battery protection box	/	1	set	/
Connector	MC4	2	set	/
DC cable	PV1-F4	100	meter	/
Battery connection cable	BVR-	10	meter	/
AC cable	YJV22-	100	meter	/
Mounting Brackets	/	1	set	/
Battery pack	48V/5KWH	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm ² , Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A

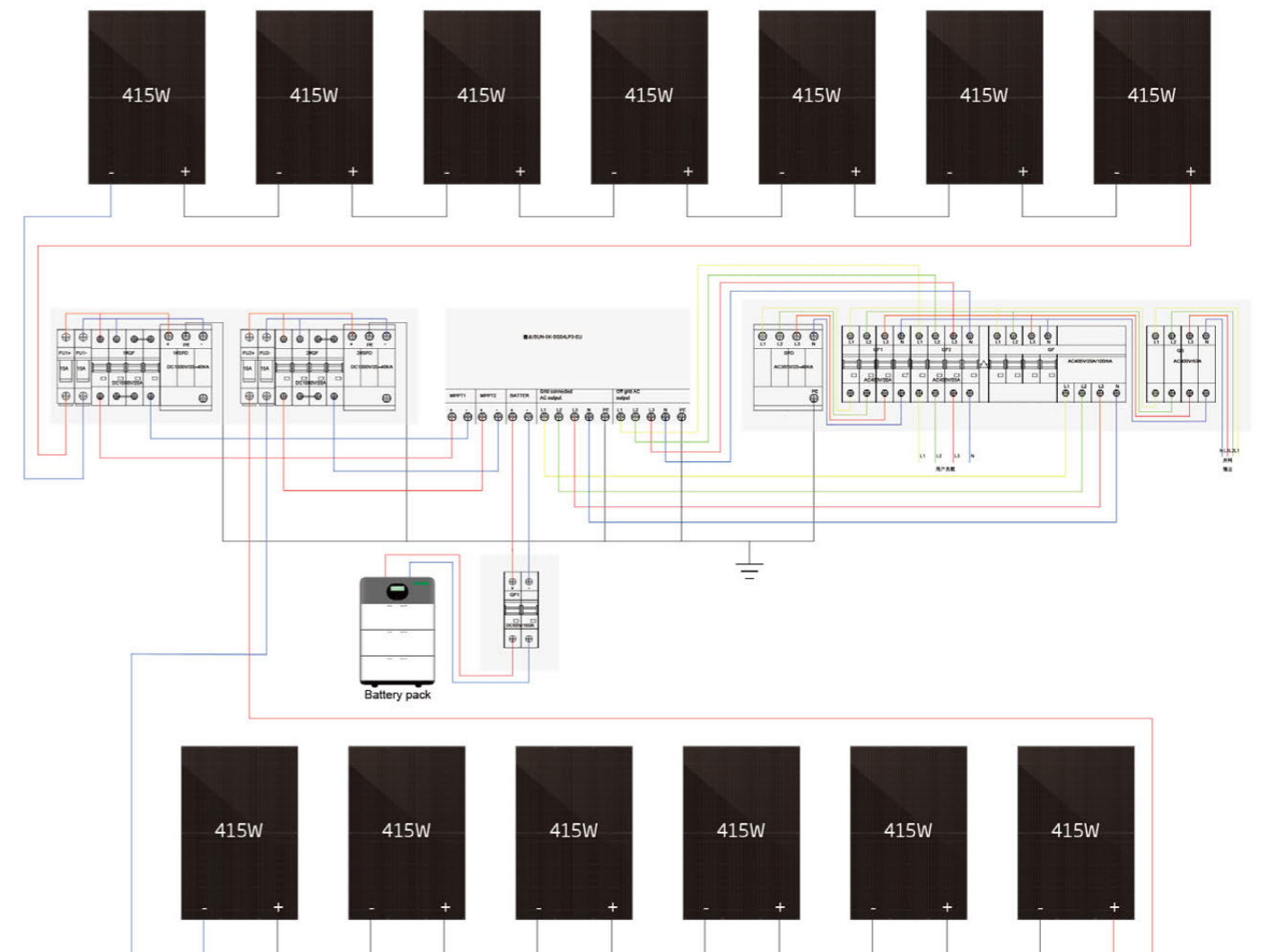


5KW Inverter

GROWATT INVERTER	SPH 5000TL3 BH-U
Max input DC power (W)	7500W
Max input DC voltage (V)	1000V
Start-up voltage(V)	120V
Rated voltage(V)	600V
MPPT rated voltage range/rated input voltage (V)	120-1000V
MPPT quantity	2
Number of MPPT strings	1
Max input current of each string (A)	13.5A
Maximum short circuit current of each MPPT	16.9A
Rated AC output power(W)	5000W
Rated voltage (range)	230V/400V (310~476V)
Rated frequency (range)	50Hz/60Hz (45Hz-55Hz/55Hz-65Hz)
Maximum output current	7.6A
Power factor	0.8 lead ~0.8 lag
THDi	<3%
AC connection type	L+N+PE



Wiring diagram of 5KW energy storage system



10KW Three-phase energy storage system

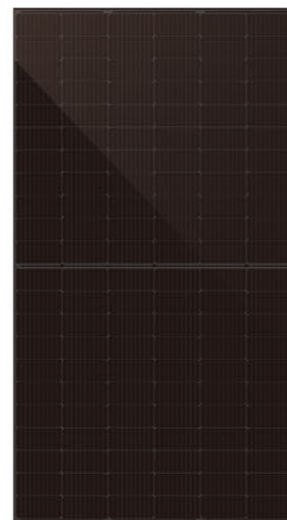


10 Three-phase energy storage system

	MODEL	QUANTITY	UNIT	MPPT/ INTERFACE
Component	single crystal 415W	25	piece	/
DC String box	2 in 2 out //(DC1000V)	1	set	/
Battery Storage Inverter	GW10KN-ET(10KW)	1	set	2/1+1
AC distribution box	/	1	set	/
Battery protection box	/	1	set	/
Connector	MC4	2	set	/
DC cable	PV1-F4	100	meter	/
Battery connection cable	BVR-	10	meter	/
AC cable	YJV22-	100	meter	/
Mounting Brackets	/	1	set	/
Battery pack	48V/10KWH	1	set	/
Installation tool	/	1	set	/

Photovoltaic Module

TRINA PHOTOVOLTAIC MODULES	TSM-DE09R.05
Max Power	415W
Power tolerance	0~+5W
MTTP working voltage	41.7V
MTTP working current	9.94A
Open-circuit voltage	50.0V
Short-circuit current	10.55A
Module efficiency	20.8%
Cell type	Single crystalline
Cell quantity	144 pieces
Module size	1762*1134*30mm
Weight	21.8KG
Cable	4.0mm2, Negative pole 280mm/Positive pole 350mm
TK Pmax	-0.34%/°C
TK Voc	-0.25%/°C
Temp of Isc	0.04%/°C
Max fuse rated current	20A



10KW Inverter

GOODWE INVERTER	GW10KN-ET
Max input DC power (W)	15000W
Max input DC voltage (V)	1000V
Start-up voltage(V)	180V
Rated voltage(V)	620V
MPPT rated voltage range/rated input voltage (V)	200-850V
MPPT quantity	2
Number of MPPT strings	1
Max input current of each string (A)	16A
Maximum short circuit current of each MPPT	21.2A
Rated AC output power(W)	10000W
Rated voltage (range)	400V/380V
Rated frequency (range)	50Hz
Maximum output current	16.5A
Power factor	0.8 lead ~0.8 lag
THDi	<3%
AC connection type	L1+L2+L3+N+PE



Wiring diagram of 10KW energy storage system

