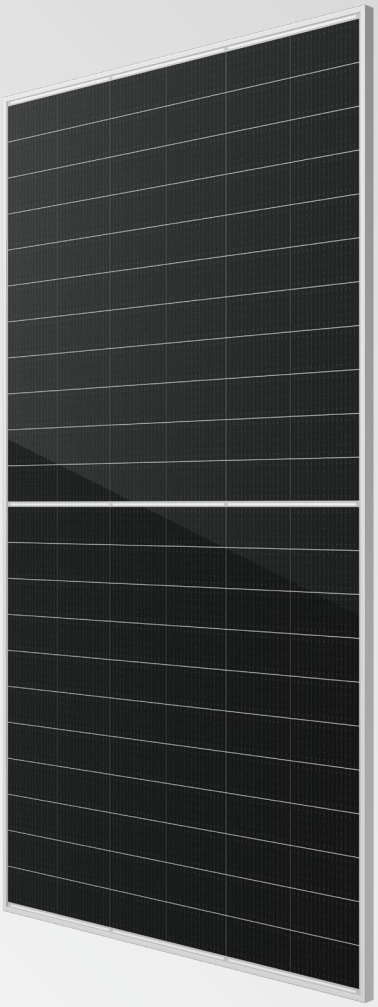
Making more power



BiMAX 6N

# 690-720W

## SP720M-66H

Bifacial TOPCon Half Cell Double-glass Solar Module

### TOPCon 2.0 Technology

Combining gettering process and single-side μc-Si technology to ensure higher cell efficiency and higher module power.

### -0.30%/°C Pmax temperature coefficient

More stable power generation performance and even better in hot climate.

### SMBB design with Half-Cut Technology

Shorter current transmission distance, less resistive loss and higher cell efficiency.

### Up to 90% Bifaciality

Natrual symmetrical bifacial structure bringing more energy yield from the backside.

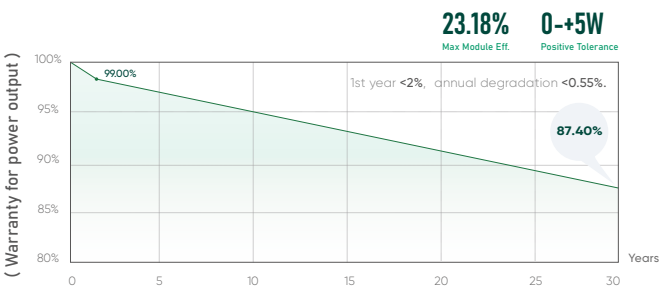
### Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extent module lifespan.

### Quality Management System and Product Certification

IEC61215/61730, IEC62804(PID), IEC61701(Salt).
IEC62716 (Ammonia), IEC60068-2-68(Sand).
ISO 9001:2015/quality management system.
ISO 14001:2015/environmental management system.
ISO 45001:2018/occupation health safety management system.
ISO 50001:2011/energy management system.
IEC TS 62941-2016/PV industry quality management system.

### Quality Guarantee

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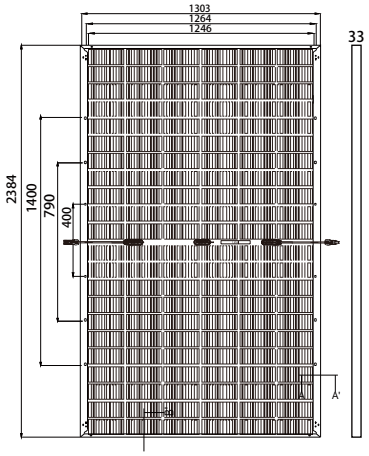
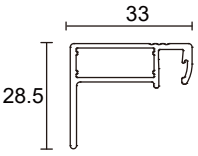
# BiMAX 6N 690-720W

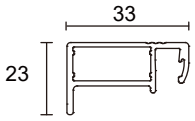
## Design(mm)




Frame Cross Section A-A




Frame Cross Section B-B




| | |
|---|---|
| Solar Cells | TOPCon 210mm |
| No. of Cells | 132 (6×22) |
| Dimensions | 2384 × 1303 × 33mm |
| Weight | 37.5kg |
| Glass Thickness | (F) 2.0mm anti-reflective solar glass \| (B) 2.0mm solar glass |
| Frame | Anodized aluminium alloy |
| Junction Box | IP68 |
| Output Cables | 4mm²,300mm in length, length can be customized / UV resistant |
| Connectors | MC4 original /MC4 compatible |
| Mechanical load test | 5400Pa |
| Packaging | 33pcs/box, 594pcs/40'HQ |

## Temperature Characteristics

| | |
|---|---|
| NMOT (Nominal Module Operating Temperature) | 44°C(±2°C) |
| Temperature Coefficient of Voc | -0.250%/°C |
| Temperature Coefficient of Isc | +0.046%/°C |
| Temperature Coefficient of Pmax | -0.300%/°C |

## Operating Characteristics

| | |
|---|---|
| Operating Module Temperature | -40°C ~ +85°C |
| Maximun System Voltage | DC 1500 (IEC) |
| Maximun Series Fuse Rating | 35A |
| Power Tolerance | 0~+5W |
| Bifaciality | 80%±5% |

## Electrical Parameters (STC*)

| Module Type: SP720M-66H | 690 | 695 | 700 | 705 | 710 | 715 | 720 |
|---|---|---|---|---|---|---|---|
| Maximum Power (Pmax/W) | 690 | 695 | 700 | 705 | 710 | 715 | 720 |
| Module Efficiency(%) | 22.21% | 22.37% | 22.53% | 22.70% | 22.86% | 23.12% | 23.18% |
| Optimum Operating Voltage (Vmp/V) | 39.80 | 40.00 | 40.20 | 40.40 | 40.60 | 40.80 | 41.00 |
| Optimum Operating Current (Imp/A) | 17.34 | 17.38 | 17.41 | 17.45 | 17.49 | 17.52 | 17.56 |
| Open Circuit Voltage (Voc/V) | 47.80 | 48.00 | 48.20 | 48.40 | 48.60 | 48.80 | 49.00 |
| Short Circuit Current (Isc/A) | 18.30 | 18.40 | 18.48 | 18.52 | 18.57 | 18.61 | 18.65 |

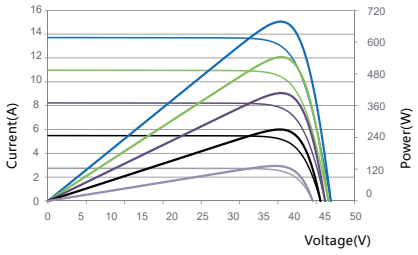
## BSTC*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Maximum Power (Pmax/W) | 526 | 530 | 534 | 538 | 541 | 545 | 549 |
| Optimum Operating Voltage (Vmp/V) | 37.60 | 37.80 | 38.00 | 38.20 | 38.35 | 38.55 | 38.75 |
| Optimum Operating Current (Imp/A) | 13.99 | 14.02 | 14.05 | 14.08 | 14.11 | 14.14 | 14.17 |
| Open Circuit Voltage (Voc/V) | 45.35 | 45.55 | 45.75 | 45.95 | 46.15 | 46.35 | 46.55 |
| Short Circuit Current (Isc/A) | 14.70 | 14.78 | 14.82 | 14.86 | 14.91 | 14.94 | 14.97 |

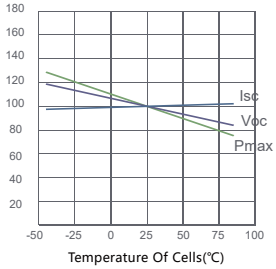
*STC: Irradiance 1000 W/m², cell temperature 25°C, AM=1.5. Tolerance of Pmax is within +/- 3%.
*BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m2, AM=1.5, ambient temperature 25°C.

## I-V Curve

SP710M-66H




SP710M-66H



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MPS microgrid series

# MPS microgrid hybrid inverter

## KEY STRENGTHS

- Integrated PV/MPPT module/transformer/STS and maintenance bypass.
- Support 100% unbalance.
- Support parallel connection of multiple machines.
- Easy expansion, support PV flexible configuration.
- Support DG load rate control to improve fuel economy.
- Support flexible configuration of control strategies.

## APPLICATIONS

Off-grid mine | Off-grid island | Nomadic farm | Villages without electricity

| | | | |
|---|---|---|---|
|  |  |  |  |
| MPS0030/MPS0050 | MPS0100/MPS0150 | MPS0250 | MPS0500 |

| Model | MPS0030 | MPS0050 | MPS0100 | MPS0150 | MPS0250 | MPS0500 |
|---|---|---|---|---|---|---|
| **AC(on-grid)** | | | | | | |
| Max. output power (kW) | 33 | 55 | 110 | 165 | 275 | 550 |
| Rated output power (kW) | 30 | 50 | 100 | 150 | 250 | 500 |
| Rated voltage(V) | 400 | | | | | |
| Voltage range (V) | 320~460 | | | | | |
| Rated current (A) | 43 | 72 | 144 | 216 | 361 | 722 |
| Rated frequency (Hz) | 50/60 | | | | | |
| Frequency range (Hz) | 45~55/55~65 | | | | | |
| THDi | <3% | | | | | |
| Power factor | 1leading-1lagging(settable) | | | | | |
| Grid type | 3W+N+PE | | | | | |
| **AC(off-grid)** | | | | | | |
| Max. output power (kW) | 33 | 55 | 110 | 165 | 275 | 550 |
| Rated power (kW) | 30 | 50 | 100 | 150 | 250 | 500 |
| Rated voltage (V) | 400 | | | | | |
| Rated current (A) | 43 | 72 | 144 | 216 | 361 | 722 |
| THDu | ⩽1% linear; or⩽5% nonlinear | | | | | |
| Rated frequency (Hz) | 50/60 | | | | | |
| Overload capacity | 110% long-term, 120% 1min | | | | | |
| **PV input** | | | | | | |
| Max. PV input voltage (V) | 1,000 | | | | | |
| Max. PV power (kW) | 36/72 | 60/120 | 120/180/240 | 120/180/240 | 300/360 | 600/660/720 |
| MPPT module quantity | 1/2 | 1/2 | 2/3/4 | 2/3/4 | 5/6 | 10/11/12 |
| MPPT voltage range (V) | 250~850 | | | | | |
| **Battery** | | | | | | |
| Battery voltage range (V) | 250~850 | 320~850 | 420~850 | 420~850 | 420~850 | 500~850 |
| Max. charging power (kW) | 36/72 | 60/120 | 120/180/240 | 120/180/240 | 300/360 | 600/660/720 |
| **General data** | | | | | | |
| Dimension W*D*H (mm) | 800*800*1,900 | 800*800*1,900 | 1,200*800*2,050 | 1,200*800*2,050 | (600*720*2,050)*1+ 1,200*800*2,050 | (600*720*2,050)*2+ 1,600*1,050*2,050 |
| Weight (kg) | 620/650 | 720/750 | 1,120/1,150/1,180 | 1,250/1,280/1,310 | 1,980/2,010 | 3,265/3,295/3,325 |
| Operation temperature (℃) | -30 ~ 55 | | | | | |
| Relative humidity | 0 ~95% non-condensing | | | | | |
| Ingress protection | IP20 | | | | | |
| Noise emission (dB) | <70 | | | | | |
| Operating altitude (m) | <5,000(>3,000 Derating) | | | | | |
| Cooling | Air Cooling | | | | | |
| **Display and communication** | | | | | | |
| Display | LCD touch-screen | | | | | |
| BMS communication | RS485, CAN | | | | | |
| EMS communication | RS485, TCP/IP | | | | | |
| Certificates | EN 62109-1/-2, EN 62477-1, EN 61000-6-2/-6-4, IEC61727, IEC62116, IEC61683 NRS 097-2-1:2017, ASGC, AS/NZS 4417.1, CEI 0-21, CEI 0-16, G99 EN 50549-1, VDE 4105 | | | | | |

## MPS PV and battery configuration principles:

> Boost mode configuration principle - open voltage at low temperature at the limit of PV installation * number of PV panels in series ⩽ the lowest voltage of the battery;

> Buck mode configuration principle - the maximum power operating voltage at the extreme high temperature of PV installation⩾ the highest voltage of the battery;

> The PV and battery configurations of MPS must comply with the above configuration principles.

# High Volage Lithium-Ion Phosphate Battery storage system51.2V314Ah

| **Module** | **51.2V314AH**(0.5C) |
|---|---|
| Basic Parameters | |
| Capacity(kWh) | 16.0768 |
| Nominal Voltage(Vdc) | 51.2 |
| Nominal Capacity(AH) | 314 |
| Voltage Range(Vdc) | 44.8~56.8 |
| Depth of Discharge | 90% |
| Dimension(W* D* H,mm) | 885mm*434mm*238.2mm（±5） |
| Design Life | 15+ years (25℃) |
| Cycle Life | > 6000 (25℃) |
| Communication | CANBUS/Modbus RTU/TCP/IP |
| Protection Class | IP20 |
| Weight(kg) | 110kg±3kg |
| Operation Temperature | 0~50℃ |
| Storage Temperature | -20~60℃ |
| Product Certificate | UN38.3 |

# Main Controller : 1500V200A

| Module | 1500V200A |
|---|---|
| Basic Parameters | |
| Related Product | 1500V200A |
| AC Supply | — |
| System Operation Voltage (Vdc) | 0~1500 |
| Operation Current (Max.) (A) | 200 |
| Self-consumption Power(W) | 8 |
| Dimension (W* D* H, mm) | 885mm*434mm*238.2mm（±5） |
| Communication | MODBUS RTU/CAN |
| Protection Class | IP20 |
| Weight(kg) | 20 |
| Operation Life | 15+ |
| Operation Temperature | -20~65 |
| Storage Temperature | -40~80 |

BMS Function

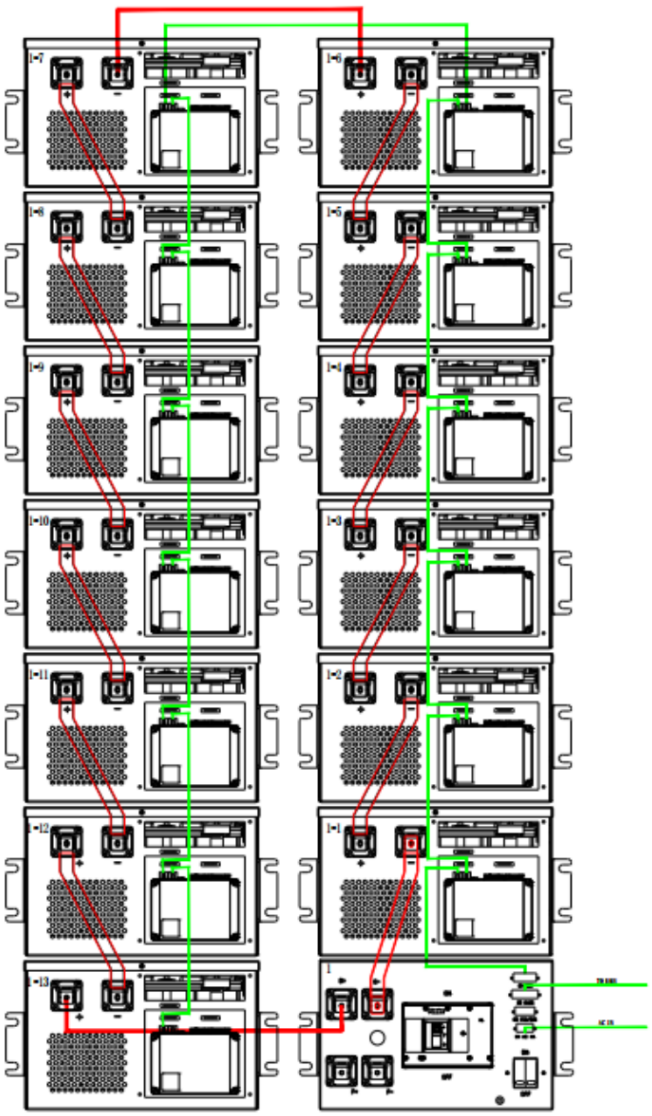
### Protection and Alarm

Charge/Discharge End
Charge Over Voltage
Charge/Discharge Over Current
High/Low Temperature
Operation Record
Administrator Monitor: Current, Voltage, Temperature, SOC&SOH.

### Management and Monitor

Cells Balance
Intelligent Charge Model
Capacity Retention Calculate
Isolation and Protection
Alarm and Protection

# Standard Battery Cluster 665.6V 314AH



| Module | 665.6V314AH |
|---|---|
| Basic Parameters | |
| Battery System Capacity (kWh) | 208.9984 |
| Battery System Voltage (Vdc) | 665.6 |
| Battery System Capacity (AH) | 314 |
| Battery Module | 51.2V314Ah |
| Battery Capacity(kWh) | 16.0768 |
| Battery Modules Qty. (Optional ) | 13 |
| Battery System Charge Upper-Voltage | 738.4 |
| Standard Operation Current( A ) | 157 |
| Normal Operation Current( A) | 157 |
| Max. Operation Current( A ) | 180 |
| Battery System Discharge lower-Voltage | 603.2 |
| Round-trip efficiency（@1C-rate） | 95% |
| Depth of Discharge | 90% |
| Dimension(W* D* H, mm) | ~945mm（W）*1334mm（D）*2000mm（H）±10 |
| Communication | CANBUS/Modbus RTU/TCP/IP |
| Weight (kg) | ~1700kg |
| Operation Life | 15+Years |
| Operation Temperature | 10~40℃ |
| Storage Temperature | -20~60℃ |
| Humidity | 5 – 95%(without condensing) |
| Altitude (m) | <4000 |
| Product Certificate | CE/UN38.3 |

# Control and combiner cabinet

The bus cabinet is the dc side bus control unit of the energy storage battery system, which is connected with the high voltage box and storage.
Intermediate unit capable of converter; The power pool system (stack) is installed in the bus cabinet.
Switch off/circuit breaker (optional), three-level BMS (ESMU), and UPS power supply. Confluence ark.
The electrical characteristics, heat dissipation performance and safety performance of each component have been fully considered in the design.
And operation and maintenance, reasonable space layout, with compact structure, flexible configuration, security.
Full reliability and other characteristics. Three stage BMS module (ESMU) in the bus cabinet, with CAN,
Rs-485, RJ45 Ethernet communication interface, can be realized with high voltage box, PCS/UPS or
The communication function between EMS realizes the data communication and control of the energy storage battery management system and protection.


| No | Item | Para Range | Quantity | Function | Remark |
|---|---|---|---|---|---|
| 1 | DC Breaker | 630/1250/1600A | 1 | Main loop protection | |
| 2 | BMS | ESMU-10 II | 1 | Display communication contro | |
| 3 | Switching power supply | 35W/75W 24V | 1 | Power Supply | |
| 4 | Miniature circuit breaker | S202-C64/20/10 | / | Switch | |
| 5 | Emergency stop switch | LA38-22ZS | 1 | scram protection | |
| 6 | Repeaters | CR-MX024DC2L | / | Signal control and conversion | |
| 7 | LED instruction | ED16-22DSR(G/Y/R) | / | status indicator | |
| 8 | Surge protective devices (spd) | Ex9UEP 20 3P | 1 | Lightning protection bus | |
| 9 | Fuse | DC1500/1000V 300A | 1 | protection | |
| 10 | Terminal strip | | / | Communication power signal conversion | |