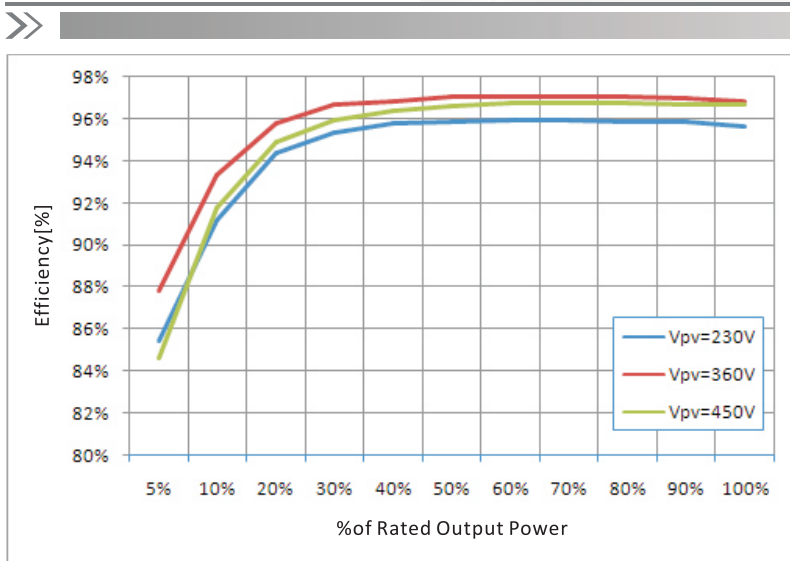


MASS ENERGY INVERTER 1-Phase String Inverter

1100TL/1600TL/2200TL/2700TL/3000TL



Efficiency Curve

High-yield

- Max 97.2% efficiency
- Real time precise MPPT algorithm for max harvest
- Wide input voltage operation range

All in one, flexible and economical system solution

- Free site selection due to IP65
- Easy installation and maintenance due to "Plug & Play" connection
- Interface selection – Wi-Fi / RS485 / GPRS
- 4" LCD display

Low maintenance cost

- Detachable cover for easy installation
- Rust-free Aluminum covers
- Flexible monitoring solution
- Multi function relay can be configured to show various inverter information

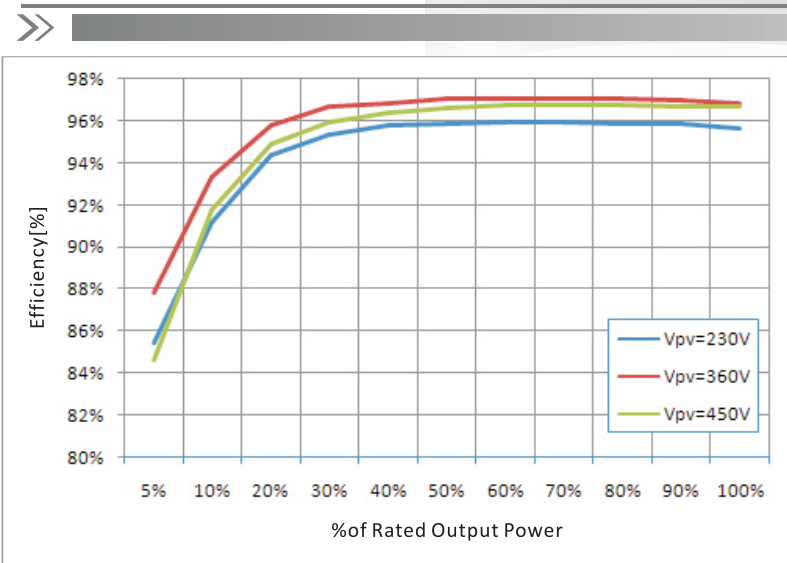
Intelligent grid management

- Reactive power capability
- Self power reducer when over frequency
- Remote active/reactive power limit control

Technical Data	SOFAR 1100TL	SOFAR 1600TL	SOFAR 2200TL	SOFAR 2700TL	SOFAR 3000TL
Input(DC)					
Max. Input Power	1100W	1600W	2200W	2700W	3000W
Number of MPPT/String per MPPT	1/1				
Max. input voltage	450V		500V		550V
Start-up input voltage	100V		120V		
Rated input voltage	360V				
MPPT voltage range	80-450 V		100-500 V		100-550 V
Full load DC voltage range	110-450 V	165-450 V	170-500 V	200-500 V	
Max. input current	10A		13A	13.5A	15A
Output(AC)					
Rated Power	1000VA	1550VA	2100VA	2600VA	3000VA
Max.AC Power	1000VA	1550VA	2100VA	2600VA	3000VA
Max.AC Output Current	4.5A	7A	9.5A	11.5A	13A
Nominal Grid Voltage	230V				
Grid Voltage Range	180~270 V(According to local standard)				
Nominal Frequency	50/60Hz				
Grid frequency Range	47~53 / 57~63Hz (According to local standard)				
THDi	<3%				
Power factor	1 (adjustable +/-0.8)				
Grid connection	Single phase				
Power Limit export	Zero export or adjustable power limit export				
Efficiency					
Max. efficiency	97%		97.1%		97.2%
Euro efficiency	95.2%	95.9%	96.1%	96.4%	96.5%
MPPT adaptation efficiency	>99.5%				
Standard					
EMC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4				
Safety standards	IEC 62109-1, IEC 62109-2				
Grid standards	AS 4777, VDE V 0124-100, VDE V 0126-1-1, VDE-AR-N 4105, EN50438, G83/2, C10/11, RD1699				
Protection					
Anti-Islanding Protection	Yes				
DC Reverse Polarity Protection	Yes				
Over Temp Protection	Yes				
Leakage Current Protection	Yes				
Over Voltage Protection	Yes				
Over Current Protection	Yes				
Earth Fault Protection	Yes				
SPD	Type III standard				
Communication					
Standard Communication Mode	wifi, RS485, GPRS(optional), SD card				
Operation Data Storage	25 years				
I/O	Yes				
General Date					
DC Switch	optional				
Ambient temperature range	-25°C...+60°C				
Topology	Transformerless				
Cooling	Natural				
Allowable relative humidity range	0...95% no condensing				
Max. operating altitude	2000m				
Noise	<25db@1m				
Degree of Protection(per IEC 60529)	IP65				
Dimension	405*314*135mm				
Weight	11kg				12kg
Self-consumption at night	<1w				
Display	LCD display				
Warranty	5 years				

MASS ENERGY INVERTER 1-Phase String Inverter

3000TLM / 3680TLM / 4000TLM / 4600TLM / 5000TLM / 6000TLM



Efficiency Curve

High-yield

- Max 97.6% efficiency
- Real time precise MPPT algorithm for max harvest
- Wide input voltage operation range

All in one, flexible and economical system solution

- Free site selection due to IP65
- Easy installation and maintenance due to "Plug & Play" connection
- Interface selection – Wi-Fi / RS485 / GPRS
- 4" LCD display

Low maintenance cost

- Detachable cover for easy installation
- Rust-free Aluminum covers
- Flexible monitoring solution
- Multi function relay can be configured to show various inverter information

Intelligent grid management

- Reactive power capability
- Self power reducer when over frequency
- Remote active/reactive power limit control

MASS ENERGY INVERTER 1-Phase String Inverter

>> 3000TLM /3680TLM/4000TLM/4600TLM/5000TLM/6000TLM

Technical Data	SOFAR 3000TLM	SOFAR 3680TLM	SOFAR 4000TLM	SOFAR 4600TLM	SOFAR 5000TLM	SOFAR 6000TLM
Input(DC)						
Max.Input power	3100W	3800W	4160W	4800W	5200W	6300W
Max DC power for single MPPT	2000(200V-500V)	2400(200V-500V)	2600(200V-500V)	3000(200V-500V)		3150(250V-520V)
Number of independent MPPT	2					
Number of DC inputs	1 for each MPPT					
Max. input voltage	600V					
Start-up input voltage	100V	120V				
Rated input voltage	360V					
MPPT voltage range	80V-580V	100V-580V				
Full load DC voltage range	160V-520V	165V-520V			175V-520V	250V-520V
Max. input current per MPPT	10A/10A	12A/12A	13A/13A	15A/15A		
Input short circuit current for each MPPT	12A	14A	16A	18A		
Output(AC)						
Rated power	3000VA	3680VA	4000VA	4600VA	5000VA	6000VA
Max. AC power	3000VA	3680VA	4000VA	4600VA	5000VA	6000VA
Max. output current	13A	16A	17.5A	20A	22A	26A
Nominal Grid Voltage	230V					
Grid Voltage Range	180~270 V(According to local standard)					
Nominal Frequency	50/60Hz					
Grid frequency range	47~53 / 57~63Hz (According to local standard)					
Active power adjustable range	0~100%					
THDi	<3%					
Power factor	1 (adjustable +/-0.8)					
Power Limit export	Zero export or adjustable power limit export					
Performance						
Max. efficiency	97.6%					
Weighted eff. (EU/CEC)	97.1%/97.3%					
Self-consumption at night	<1W					
Feed-in start power	20W					
MPPT efficiency	>99.5%					
Protection						
DC reverse polarity protection	Yes					
DC switch	optional					
Protection class /overvoltage category	I/III					
Input / output MOV (III)	Yes					
Safety protection	Anti islanding, RCMU, Ground fault monitoring					
Certification	CE, CGC, AS4777,AS3100,VDE4105,C10-C11,G83/G59 (more available on request)					
SPD	Type III standard					
Communication						
Power management unit	According to certification and request					
Standard Communication Mode	wifi,RS485,GPRS(optional),SD card					
Operation Data Storage	25 years					
General data						
Ambient temperature range	-25°C...+60°C					
Topology	Transformerless					
Degree of protection	IP65					
Allowable relative humidity range	0...95% no condensing					
Max.operating altitude	2000m					
Noise	<25dB					
Weight	18kg			19kg		
Cooling	Natural					
Dimension	344*478*170mm					
Display	LCD display					
Warranty	5 years					

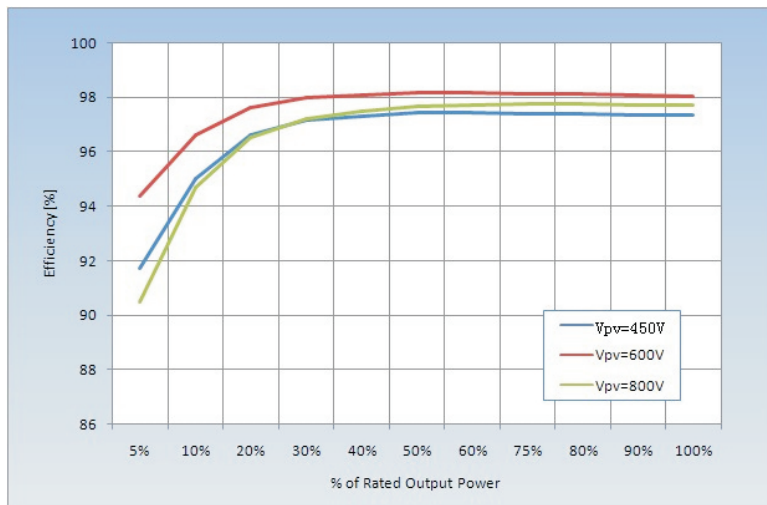


AS4777 G83/2 G59/3

CE, CQC, IEC, VDE-AR-N4105 / VDE-0126, EMC, C10/11, EN50438, RD1669, CEI 0-21

MASS ENERGY INVERTER 3-Phase String Inverter

4.4KTL-X/5.5KTL-X/6.6KTL-X/8.8KTL-X/11KTL-X/12KTL-X



Efficiency Curve

High-yield

- Max 98.3% efficiency
- Real time precise MPPT algorithm for max harvest
- Wide input voltage operation range from 160V to 960V

All in one, flexible and economical system solution

- DC switch
- 4 inch screen, English display
- Optimum selection for big PV plants, commercial buildings...

Low maintenance cost

- High power density
- Rust-free aluminum covers
- Flexible monitoring solution
- Small size, Light weight

Intelligent grid management

- Reactive power adjustable
- Self power reducer when over frequency
- Remote active/reactive power limit control

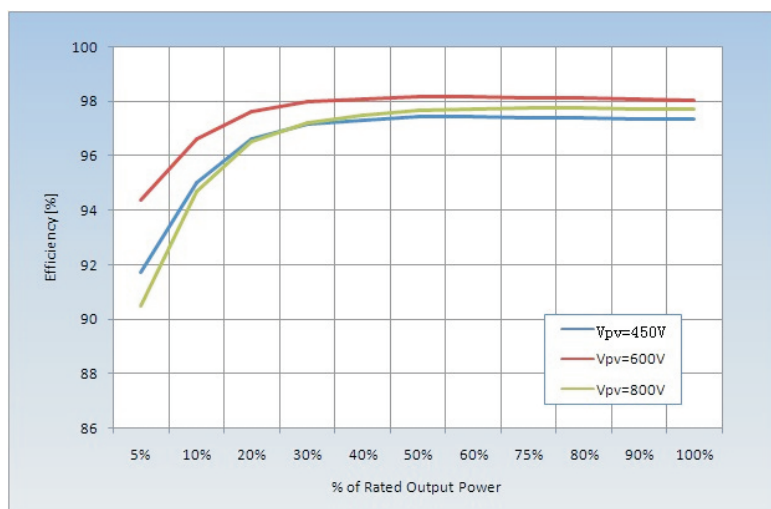
MASS ENERGY INVERTER 3-Phase String Inverter

➤➤ 4.4KTL-X/5.5KTL-X/6.6KTL-X/8.8KTL-X/11KTL-X/12KTL-X

Technical Data	SOFAR 4.4KTL-X	SOFAR 5.5KTL-X	SOFAR 6.6KTL-X	SOFAR 8.8KTL-X	SOFAR 11KTL-X	SOFAR 12KTL-X
Input(DC)						
Typical PV Power	4800W	6000W	7200W	9600W	12000W	14400W
Max DC power per MPPT	2640W	3300W	3960W	5280W	6600W	7200W
Number of independent MPPT	2					
Number of DC inputs	1 for each MPPT					
Max. input voltage	1000V					
Start-up input voltage	180V					
Rated input voltage	600V					
MPPT voltage range	160V-960V					
Full load DC voltage range	190V-850V	240V-850V	290V-850V	380V-850V	480V-850V	575V-850V
Max. input current per MPPT	11A/11A					
Input short circuit current for each MPPT	14A					
Output(AC)						
Rated power	4000VA	5000VA	6000VA	8000VA	10000VA	12000VA
Max. AC power	4400VA	5500VA	6600VA	8800VA	11000VA	13200VA
Max. output current	6.4A	8.0A	9.6A	12.8A	15.9A	19.1A
Nominal Grid Voltage	3/N/PE,220/380		3/N/PE,230/400		3/N/PE,240/415	
Grid Voltage Range	184V-276V(According to local standard)					
Nominal Frequency	50/60Hz					
Grid frequency range	50Hz, +/-5Hz (According to local standard)					
Active power adjustable range	0~100%					
THDi	<3%					
Power factor	1 (adjustable +/-0.8)					
Performance						
Max. efficiency	98%			98.3%		
Weighted eff. (EU/CEC)	97.5%			98%		
Self-consumption at night	<1W					
Feed-in start power	45W					
MPPT efficiency	>99.5%					
Protection						
DC reverse polarity protection	Yes					
DC switch	Yes					
Safety protection	Anti islanding, RCMU, Ground fault monitoring					
Certification	CE, CGC, AS4777, AS3100, VDE 4105, C10-C11, G83/G59 (more available on request)					
SPD	Type III standard					
Communication						
Power management unit	According to certification and request					
Standard Communication Mode	wifi (optional), GPRS(optional), SD card, RS485					
Operation Data Storage	25 years					
General data						
Ambient temperature range	-25°C...+60°C					
Topology	Transformerless					
Degree of protection	IP65					
Allowable relative humidity range	0...95% no condensing					
Max. operating altitude	2000m					
Noise	<29dB					
Weight	21kg			22kg		
Cooling	Natural					
Dimension	483*452*200mm					
Display	LCD display					
Warranty	5 years					

MASS ENERGY INVERTER 3-Phase String Inverter

10000TL/15000TL/17000TL/20000TL



Efficiency Curve

High-yield

- Max 98.2% efficiency
- Real time precise MPPT algorithm for max harvest
- Wide input voltage operation range from 250V to 960V

All in one, flexible and economical system solution

- DC switch
- DC surge protection device (option)
- AC surge protection device (option)
- Power management unit
- Optimum selection for big PV plants, commercial buildings...

Low maintenance cost

- Detachable cover for easy installation
- Rust-free aluminum covers
- Flexible monitoring solution
- Multi function relay can be configured to show various inverter information

Intelligent grid management

- ZVRT support
- Reactive power adjustable
- Self power reducer when over frequency
- Remote active/reactive power limit control

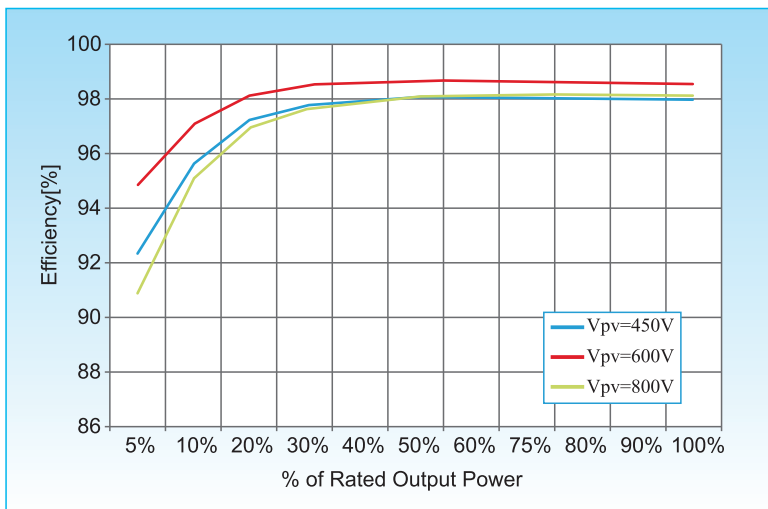
MASS ENERGY INVERTER 3-Phase String Inverter

» 10000TL / 15000TL / 17000TL / 20000TL

Technical Data	SOFAR 10000TL	SOFAR 15000TL	SOFAR 17000TL	SOFAR 20000TL
Input(DC)				
Max.Input power	10400W	15600W	17700W	20800W
Max DC power for single MPPT	6750(450V-850V)	10500(500V-850V)	10500(500V-850V)	12000(500V-850V)
Number of independent MPPT	2			
Number of DC inputs	2 for each MPPT		2 for each MPPT	
Max. input voltage	1000V			
Start-up input voltage	350V			
Rated input voltage	600V			
MPPT voltage range	250V-960V			
Full load DC voltage range	350V-850V	370V-850V	420V-850V	430V-850V
Max. input current per MPPT	15A/15A	21A/21A	21A/21A	24A/24A
Input short circuit current for each MPPT	20A	27A	27A	30A
Output(AC)				
Rated power(@230V,50Hz)	10000VA	15000VA	17000VA	20000VA
Max. AC power	10000VA	15000VA	17000VA	20000VA
Max. output current	15A	22A	25A	29A
Nominal Grid Voltage	3/N/PE,220/380 or 3/N/PE,240/415 or 3/N/PE,230/400			
Grid Voltage Range	180V ~ 270V			
Nominal Frequency	50/60Hz			
Grid frequency range	47~53 / 57~63Hz (According to local standard)			
Active power adjustable range	0~100%			
THDi	<3%			
Power factor	1(Adjustable +/-0.8)			
Performance				
Max efficiency	98.2%			
Weighted eff. (EU/CEC)	97.6%/97.8%	97.9%/98%	97.9%/98%	98%/98.1%
Self-consumption at night	<1W			
Feed-in start power	45W			
MPPT efficiency	>99.5%			
Protection				
DC reverse polarity protection	Yes			
DC switch	Yes			
Protection class /overvoltage category	I/III			
Input/output SPD(II)	Optional			
Safety protection	Anti islanding, RCMU, Ground fault monitoring			
Certification	CE, CGC, AS4777,AS3100,VDE4105,C10-C11,G59(more available on request)			
SPD	Type III standard			
Communication				
Power management unit	According to certification and request			
Standard Communication Mode	RS485, Wifi (optional), GPRS(optional),SD card, Multi-function relay			
Operation Data Storage	25 years			
General data				
Ambient temperature range	-25°C...+60°C			
Topology	Transformerless			
Degree of protection	IP65			
Allowable relative humidity range	0...95% no condensing			
Max.operating altitude	2000m			
Noise	<45dB			
Weight	45kg	45kg	48kg	48kg
Cooling	Natural	Natural	Natural	Natural
Dimension	707*492*240mm			
Display	LCD display			
Warranty	5 years			

MASS ENERGY INVERTER 3-Phase String Inverter

30000TL/33000TL/36000TL/40000TL



Efficiency Curve

High-yield

- Max 98.7% efficiency
- Real time precise MPPT algorithm for max harvest
- Wide input voltage operation range from 250V to 960V

All in one, flexible and economical system solution

- DC switch
- DC surge protection device (option)
- AC surge protection device (option)
- Built-in PV Combiner
- Power management unit
- Optimum selection for big PV plants, commercial buildings...

Low maintenance cost

- Detachable cover for easy installation
- Rust-free aluminum covers
- Flexible monitoring solution
- Multi function relay can be configured to show various inverter information

Intelligent grid management

- ZVRT support
- Reactive power adjustable
- Self power reducer when over frequency
- Remote active/reactive power limit control

MASS ENERGY INVERTER 3-Phase String Inverter

» 30000TL/33000TL/36000TL/40000TL

Technical Data	SOFAR 30000TL	SOFAR 33000TL	SOFAR 36000TL	SOFAR 40000TL
Input(DC)				
Max.Input power	30720W	34000W	36000W	40800W
Max DC power for single MPPT	15360W(480V-800V)	17000W(480V-800V)	20400W(500V-800V)	20400W(570V-800V)
Number of independent MPPT	2			
Number of DC inputs	4 for each MPPT			
Max. input voltage	1000V			
Start-up input voltage	350V			
Rated input voltage	600V	600V	600V	700V
MPPT voltage range	250V-960V			
Full load DC voltage range	480V-800V	480V-800V	500V-800V	570V-800V
Max. input MPPT current	64A(32A/32A)	70A(35A/35A)	76A(38A/38A)	70A(35A/35A)
Max. input current per string	12A			
Output(AC)				
Rated power(@230V,50Hz)	27600W	30000W	33000W	36000W
Max. AC power	30000VA	33000VA	36000VA	40000VA
Max. output current	43A	48A	54A	48A
Nominal Grid Voltage	3/N/PE,230/400Vac 3/N/PE,277/480Vac或3/PE,480Vac			
Grid Voltage Range	310Vac - 480Vac			422Vac - 528Vac
Nominal Frequency	50/60Hz			
Grid frequency range	47~53 / 57~63Hz (According to local standard)			
Active power adjustable range	0~100%			
THDi	<3%			
Power factor	1(Adjustable +/-0.8)			
Performance				
Max efficiency	98.5%	98.5%	98.5%	98.7%
European weighted efficiency	98.2%	98.2%	98.2%	98.4%
Self-consumption at night	<1W			
Feed-in start power	45W			
MPPT efficiency	>99.5%			
Protection				
DC reverse polarity protection	Yes			
DC switch	Yes			
Protection class /overvoltage category	I/III			
Input/output SPD(II)	Optional			
Safety protection	Anti islanding, RCMU, Ground fault monitoring			
Certification	CE,CGC,ZVRT,AS4777,AS3100,VDE4105,C10-C11,G59(more available on request)			
SPD	Type III standard			
Communication				
Power management unit	According to certification and request			
Standard Communication Mode	RS485, Wifi (optional),GPRS(optional), SD card, Multi-function relay			
Operation Data Storage	25 years			
General data				
Ambient temperature range	-25°C...+60°C			
Topology	Transformerless			
Degree of protection	IP65			
Allowable relative humidity range	0...95% no condensing			
Max.operating altitude	3000m			
Noise	<30dB	<45dB	<45dB	<45dB
Weight	50kg			
Cooling	Natural	Fan	Fan	Fan
Dimension	767*564*290.5mm			
Display	LCD display			
Warranty	5 years			

ENERGY STORAGE SYSTEM

ME 3000SP



Easy installation

- Compatible with existing grid-tied PV inverters.
- No need to upgrade distribution system.
- Uses a split-core CT, no need to disconnect the electrical grid at all .

Simple and Reliable

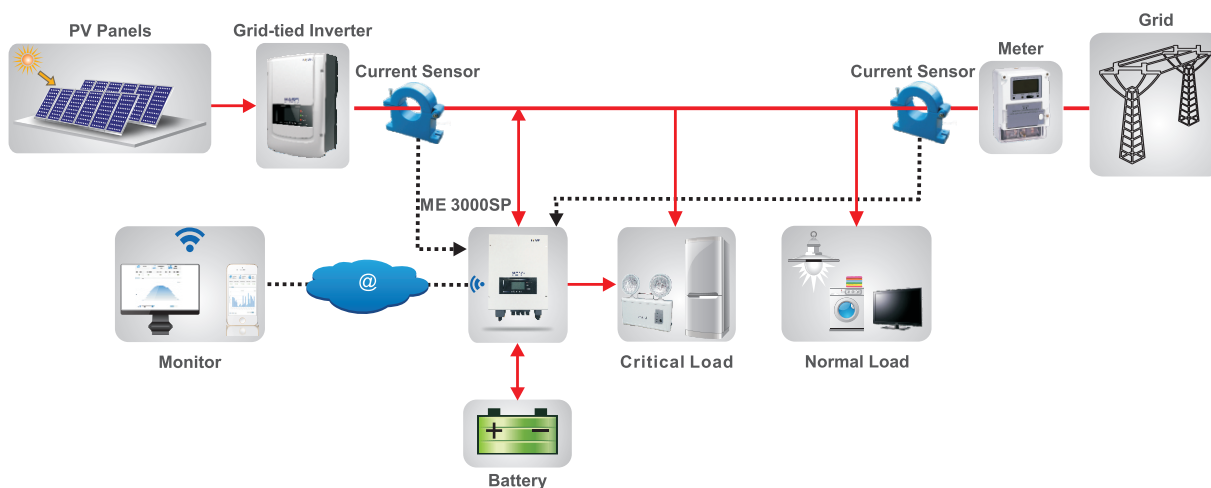
- Exchanges energy via the electrical grid, no coupling with PV inverter, mature technology, simple and reliable.
- Can integrate with all grid-tied renewable systems, including solar, wind, fuel cell etc.

Flexible solution

- Provides a full solution for energy consumers to maximize the use of their generated solar energy.
- Increases self-consumption rate (from 20% to 70%).
- User-adjustable battery charging current suits different types of batteries.

Multiple modes

- Supports stand alone mode (like UPS), Ensure the safe operation of critical load.
- Programmable multiple operations modes: Grid tie, Off grid, and grid-tie with backup.



ENERGY STORAGE SYSTEM

ME 3000SP

Technical Data

ME 3000SP

BATTERY PARAMETERS

Battery Type	Lead-acid,Lithium-ion
Nominal battery voltage	48V
Battery voltage range	42-58V
Recommended battery capacity	200Ah (100~500Ah optional)
Recommended Storage capacity	9.6kWh
Max.Charging Current	60A
Charging Current Range	0-60A(Programmable)
Charging curve	3-stage adaptive with maintenance
Max.Discharging Current	60A
Electronic protection	OCP OTP OVP
Short circuit protection	Fuse (100A)
Discharge times (Hour)	Po=1kVA9.6h
	Po=3kVA3.2h
Depth of discharge	Lithium : 0~80%DOD adjustable
	Lead-acid:0~50%DOD adjustable

AC PARAMETERS

Max.Output Power	3kVA
Rated Input/Output Voltage	230V
Max.Input/Output Current	13A
AC Input/Voltage Range	180V-270V
Grid Frequency Range	44~55Hz / 54~66Hz
THD	<3%
Power Factor	1(Adjustable +/-0.8)
Connection phase	single
Current(inrush)	0.8A/1us
Maximum output fault current	100A/1us
Maximum output overcurrent protection	13A

SYSTEM PARAMETERS

Max.Charging Efficiency	94.1%
Max.Discharging Efficiency	94.3%
Stanby Losses	<5W
Topology	High Frequency Isolated Transformer
Degree Of Protection	IP65
Safety Protection	Anti islanding, RCMU, Ground Fault Monitoring
Certification	AS4777,VDE0126-1-1,G83/2,C10/11,RD1699,UTEC15-712-1,EN50438,VDE-AR-N4105
Communication	WiFi,RS485,CAN2.0

ENVIRONMENTAL

Ambient temperature range	-25°C...+60°C (Above 45°Derating)
Allowable Relative Humidity Range	0... 100%, No Condensing
Protective Class	Class I
Max.Operating Altitude	2000m
Current Senor Connection	external

GENERAL DATA

Noise	<25dB
Weight	16kg
Cooling	Natural
Dimension(W*H*D)	532*360*173mm
Display	LCD display
Warranty	5 Years (Optional: extension to 10 years)

Emergency Power Supply

EPS rated power	3000VA
EPS rated voltage, Frequency	230V,50/60Hz
EPS rated current	13A
Total harmonic distortion	<3%
Swtich time	<3s



AS4777 G83/2 G59/3

CE, CQC, IEC, VDE-AR-N4105 / VDE-0126, EMC, C10/11, EN50438, RD1669, CEI 0-21