

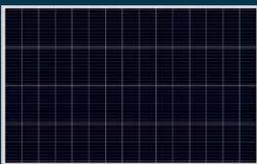
MCE[®] ELECTRIC



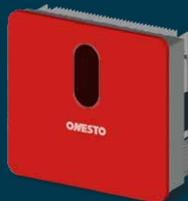
2023-2024



MCE ELECTRIC & ONESTO RENEWABLE ENERGY
A EURO SINO JOINT VENTURE



 SOLAR PAL PV



ONESTO



 -lite
LIGHTING SYSTEMS

WWW.MCE.CO.ZA

 MCE Electric SA
 mce_electricsa
 MCE Electric SA

COMPANY PROFILE



MCE ELECTRIC was established in 2001, and is a dynamic and growing distributor offering distribution boards, swimming pool distribution boards, mini circuit breakers, time switches, wiring accessories, security lighting, LED lighting Solutions & Renewable Energy Solutions from proven quality brands.

As our products are procured both locally and internationally, they are fully compliant with recognized local and International safety standards and specifications.

New products are continually being added as new technologies are developed and introduced into the market, as well as trying to meet our customers demands.

Presently MCE ELECTRIC are operating from a well stocked warehouse in Johannesburg and further warehouse's in Pretoria and Durban. We are also very well represented countrywide by our network of appointed wholesalers, distributors and agents.

MCE is the sole appointed distributor for ONESTO in the Sub-Saharan region, as well as having a stake holding in the ONESTO overseas manufacturing plants.



SOLAR PAL PV





INVERTERS



SOLAR PANELS



BATTERIES



SOLAR PUMPS



LIGHTING

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PLEASE NOTE:

SOME PICTURES MAY DIFFER FROM ACTUAL PRODUCT. PRICE, DISCOUNTS AND SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE AND EXCLUDE VAT. WHILST EVERY EFFORT IS MADE TO ENSURE THE ACCURACY OF THIS CATALOGUE, MCE CANNOT BE HELD RESPONSIBLE FOR ANY PRINTING ERRORS. E&OE.



Please Note:
UPS's are not to be used
as a load shedding
solution



Please Note:
UPS's are suitable for
Computers, PC's, Servers,
CCTV & Security Systems

UPS

SHORT-TERM POWER SUPPLY
A UPS provides power for a short duration so that data can be saved before data is lost, it will help you to keep simple appliances such as a modem, computer & phone running.

LINE INTERACTIVE UPS

UP960 | UP1200 | UP1800 | UP2400

- Line Interactive UPS with Simulated Sinewave Output
- Excellent Microprocessor Control Guarantees High Reliability (Internal Self-Diagnostics Technology)
- Boost & Buck AVR for Voltage Stabilization (Wide Input Range With Two Boost & One Buck Control)
- Auto Restart While AC Is Recovering
- Cold Start Functions
- Off Mode Charging
- Fast Intelligent Battery Recharge Function
- Generator Compatible
- Optional USB/RS232 Communication Port & RJ11/RJ45 Protection

MODEL	UP960	UP1200	UP1800	UP2400
Capacity(VA/Watts)	800 / 480	1000 / 600	1500 / 900	2000 / 1200

INPUT	
Voltage	220/230/240Vac
Voltage Range	140-300Vac
Frequency Range	50/60Hz (auto sensing)

OUTPUT	
AC Voltage Regulation (Batt. Mode)	± 10%
Frequency Range (Batt. Mode)	50/60Hz ± 1 Hz
Transfer Time	Typical 4-8ms, 13ms Max.
Waveform (Batt. Mode)	Simulated Sinewave

BATTERY	
Battery Voltage	12Vdc / 24Vdc
Battery Type & Number	12 V / 9Ah x 1 / 12 V / 7Ah x 2 / 12 V / 9Ah x 2 / 12 V / 9Ah x 2
Typical Recharge Time	4-6 hours 90% / 6-8 hours recover to 90% capacity

INDICATORS	
LED Display(LED version)	AC Mode, Battery Mode, Overload, Fault
LCD Display(LCD version)	AC Mode, Battery Mode, Load Level, Battery Level, Input Voltage, Output Voltage, Overload, Fault, and Battery Low

PROTECTION	
Full Protection	Short circuit, Overload, Overcharge and overdischarge protection

ALARM	
Battery mode	Sounding every 10 seconds
Low Battery	Sounding every second
Overload	Sounding every 0.5 second
Battery Replacement Alarm	Sounding every 2 seconds
Fault	Continuously sounding

MANAGEMENT	
Communication port	USB or RS232(Supports Windows® 2000/2003/XP/Vista/2008, Windows® 7, Linux, Unix, and MAC)

OPERATING ENVIRONMENT	
Humidity	0-90 % RH @ 0-40° C (non-condensing)
Noise Level	Less than 45dB / Less than 55dB

PHYSICAL	
Approx. Dimension D * W * H (mm)	298*101*142 / 353*149*162 / 380*158*198
Approx. Net Weight (kgs)	Approx. 4.9 / Approx. 7.8 / Approx. 10.1 / Approx. 10.5

Product specifications are subject to change without prior notice.

ONLINE UPS

UP OL 1K | UP OL 2K | UP OL 3K

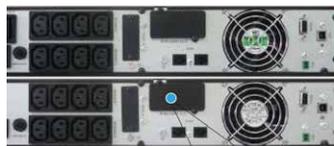
- Pure Sine Wave
- Rack/Tower Convertible Design
- Online Double Conversion with Full Digital Control
- Wide Input Voltage Range: 110~300VAC
- Input Power Factor 0.99 with PFC
- Selectable Output Voltage: 208/220/230/240Vac
- Smart Charger Design for Optimized Battery Performance
- Maximum Charging Current Can Be Expanded to 12A (Long Run Unit)
- Emergency Power Off Function (EPO)
- ECO Mode Operation for Energy Saving
- Generator Compatible
- Hot-Swappable Battery Design
- Cold Start
- Intelligent Fan Speed Regulation
- Load Segment Settable (Optional)
- Versatile LCD Human-Computer Interface
- Multiple Communication Interface: RS232 (USB/EPO/ Dry Contact/SNMP Card Optional)
- Multiple Protection Function: Short-Circuit, Overload, Overheat, Battery Overcharge & Overdischarge, Output Low Voltage & Fan Fault Alarm

Please Note:
UPS's are not to be used as a load shedding solution



UPS

SHORT-TERM POWER SUPPLY
A UPS provides power for a short duration so that data can be saved before data is lost, it will help you to keep simple appliances such as a modem, computer & phone running.



Please Note:
UPS's are suitable for Computers, PC's, Servers, CCTV & Security Systems



Multifunctional bracket



The LCD panel can be rotated

MODEL	UP OL 1K	UP OL 2K	UP OL 3K		
Capacity	1000VA/ 900W	2000VA/ 1800W	3000VA/ 2700W		
INPUT					
Nominal voltage	208/220/230/240Vac				
Input voltage range	110-300Vac (176-290Vac @ 100% load)				
Frequency range	40-70Hz (50/60Hz Auto-Sensing)				
Power factor	≥0.99				
OUTPUT					
Output voltage	208/220/230/240Vac				
Power factor	0.9				
Voltage regulation	±1%				
Output frequency	Line Mode	48-54Hz or 56-64Hz			
	Bat. Mode	(50/60±0.1%)Hz			
Crest factor	3:1				
Harmonic distortion (THDv)	≤3% Linear load				
	≤5% Non linear load				
Transfer	AC mode to Bat.Mode	0ms			
	Inverter to Bypass	4ms (Typical)			
Output waveform	Pure Sinewave				
EFFICIENCY					
AC mode	89%	91%	92%		
Battery mode	85%	87%	88%		
BATTERY					
Battery number	2	3	4	6	6
Capacity (Standard unit)	9Ah/12V				
Typical recharging time	4 hours (to 90% of full capacity)				
Charging voltage	27.4Vdc±1%	41.1Vdc±1%	54.8Vdc±1%	82.2Vdc±1%	82.2Vdc±1%
Charging current (Max)	1A	1A	1A	1A	1A
INDICATORS					
LED display	Line mode,Bat.mode,ECO mode,Bypass mode,Battery low voltage,Overload & UPS fault				
LCD display	Input voltage,Input frequency,Output voltage,Output frequency,Load percentage, Battery voltage,Inner temperature& Remaining battery backup time				
ALARM					
Battery mode	Beeping every 4 seconds				
Battery low	Beeping every second				
Overload	Beeping twice every second				
Fault	Continuously beeping				
PHYSICAL					
Dimension W x D x H (mm)	440 x 480 x 86.5	440 x 480 x 86.5 / 440 x 600 x 86.5	440 x 600 x 86.5	440 x 600 x 86.5	440 x 600 x 86.5
Net weight (kg)	11.3	14	19.5	25	26
ENVIRONMENT					
Operating temperature	0℃-40℃				
Storage temperature	-25℃-55℃				
Humidity range	20-95%RH @ 0-40℃ (Non condensing)				
Altitude	<1500m,derating required when>1500m				
Noise level	<50dB at 1 Meter				
STANDARDS					
Safety	IEC/EN62040-1,IEC/EN 62477-1				
EMC	IEC/EN62040-2,IEC/1000-4-2,IEC/1000-4-3,IEC/1000-4-4,IEC/EN1000-4-2,IEC/1000-4-3,IEC/1000-4-4				

Specifications are subject to change without prior notice.
When output voltage is 208Vac,need to derate to 80% of the unit capacity.

IP OFF-GRID INVERTERS

NEW!

IP900 & IP1600

- User selectable for accepting wide input voltage
- Off mode charging function
- Fast charging capacity. Max 10A or 20A charging current choice
- 3 stage Intelligent Charging Control
- Full protection function
- Auto restart function
- Low DC cut-off voltage setting
- LCD indicators and buzzer alarms
- Compact size
- Buzzer mute control



2 PIN SOCKET

RSA SOCKET

Top View



For Home:
Suitable to run
TV, Router, Charge Devices
etc. Not for Hair Dryers,
Irons, Kettles etc.

MODEL NAME	IP900	IP1600
CAPACITY (VA / W)	1000 / 900	2000 / 1600

INPUT

Voltage Range	
Narrow Range Mode	170-280Vac
Wide Range Mode	90-280Vac
Frequency Range	50 / 60 Hz (Auto sensing)

OUTPUT

AC Voltage Regulation (Batt.Mode)	230Vac ±10%
Frequency Range(Batt.Mode)	50/60Hz ±1Hz
Transfer Time	20 ms typical
Waveform	Modified Sine Wave

BATTERY

Battery Voltage	12V	24V
Charging Current	10A / 20A	

PROTECTION

Protection	Low battery alarm, low battery shutdown, over charge protection, overload protection, over temperature protection, short circuit protection
------------	---

ALARM

Low Battery	Beep every second
Overload	Beep every 0.5 second
Fault	Continuous Beep

OPERATING ENVIRONMENT

Humidity	0-90% RH @ 0-50 °C (non-condensing)
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PHYSICAL

Dimension (D×W×H) mm	310×239×93
----------------------	------------

OTHERS

Built-in USB Charger (5V × 1A max)	Optional
AC input voltage range selection	Yes
AC charging current selection	Yes
Low DC cut-off voltage setting	Yes
AC output rating voltage selection	Yes
Buzzer mute control	Yes
Battery Voltage & load percentage display	Yes

Product specifications are subject to change without prior notice.

**Please Refer To Pg.28 & 32
For Batteries & Cabinets**

SIP OFF-GRID SOLAR INVERTER

NEW!

SIP 1600

- Compact and quiet, less than 50dB of noise
- Selectable voltage settings for wide or narrow voltage windows
- Input protections from under/over voltage and frequency
- 10A or 20A 3 stage charging that is independent, able to charge while the inverter is turned off.
- Battery protections with low/high DC cut-off voltage settings
- Output protections from overload and short-circuit
- 20ms switching between line and battery mode
- LCD indicators and buzzer alarms that can be muted
- Solar cell module, battery reverse polarity connection protection
- Solar charge controller and solar inverter.



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**2 PIN
SOCKET**

**RSA
SOCKET**

Top View



Do Not Use On:
Geysers, Kettles, Hairdryers,
Motors, Pumps, microwaves

Model	SIP 1600
CAPACITY (VA / W)	2000 / 1600
Nominal Battery Voltage (lead-acid battery)	24Vdc

LINE MODE

INPUT

Nominal Voltage	230Vac
Voltage Range	170~280Vac (Narrow range) 90~280Vac (Wide range)
Nominal Frequency	50Hz or 60Hz

OUTPUT

Voltage	230Vac
Frequency / Waveform	Tracking the Utility
Transfer Time	20ms Typical

BACKUP MODE

OUTPUT

Voltage	220 / 230 / 240Vac
Frequency	50Hz or 60Hz (Auto detection)
Waveform	Modified Sine Wave
Protection	Low battery alarm, low battery shutdown, over charge protection, overload protection, over temperature protection, short circuit protection

Battery charger (power by AC)

Charging algorithm	3 - stage charging
AC charging mode	10A / 20A
Floating charging voltage	27.50 ± 0.50V
Overcharging voltage	30.60V
Solar battery charger	
MAX. input power	1200W
Charging current (PWM)	50A
System DC Voltage	24Vdc
Optimal work voltage range	30V~32V
MAX. PV input current	60V
MAX. PV input current	50A

GENERAL

PHYSICAL

Dimension (D×W×H) mm	316 × 227 × 92
Net Weight (kg)	3,3

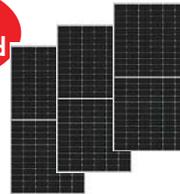
ENVIRONMENT

Operating Environment	0~50°C, 0%~90% relative humidity (Non-condensing)
Storage Environment	-15 to 50°C, 0% to 90% relative humidity (Non-condensing)
Noise Level	Less than 50dB
Built-in USB Charger (5V × 1A max)	Optional
AC input voltage range selection	Yes
AC charging current selection	Yes
Low DC cut-off voltage setting	Yes
AC output rating voltage selection	Yes
Buzzer mute control	Yes
Battery Voltage & load percentage display	Yes

Specifications subject to change without prior notice.

OPTIONAL

**Solar Panels
Can Be Added**



**ADD: 3 X 330W SOLAR PANELS
OR 2 X 455W SOLAR PANELS**

**Please Refer To Pg.28 & 32
For Batteries & Cabinets**



12VDC

12-900W

INVERTER COMBO CONSISTS OF:

- 1 x 900W OFF GRID INVERTER
- +
- 1 x 100Ah GEL BATTERY
- +
- 1 x BATTERY CABINET



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24VDC

24-1600W

INVERTER COMBO CONSISTS OF:

- 1 x 1600W OFF GRID INVERTER
- +
- 2 x 100Ah GEL BATTERY
- +
- 1 x BATTERY CABINET



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24VDC

SOL-24-1600W

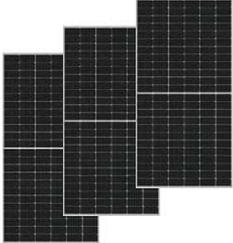
INVERTER COMBO CONSISTS OF:

- 1 x 1600W OFF GRID INVERTER
- +
- 2 x 100Ah GEL BATTERY
- +
- 1 x BATTERY CABINET



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OPTIONAL



**ADD: 3 X 330W SOLAR PANELS
OR 2 X 455W SOLAR PANELS**

NB: Please check VOC before installing Solar Panels

OST 6000HB-120

- 220 V Single phase, pure sine wave inverter
- Max efficiency 97.3%
- Battery efficiency 94%
- Max PV Power 9 KW
- Max. Charge/Discharge Current 120 A
- RS485/CAN connection for BMS support
- Natural cooling design
- Built in AC & DC Surge Protection Class 3
- Overload/Over Temperature & Short Circuit protection
- Auto Reset
- Remote Configuration and upgrades
- 2 Built in MPPT trackers with 1 string per MppT
- WIFI Dongle for Monitoring via Onesto Solar APP
- IP 65
- 5 Year Warranty once connected on WIFI and Registered



6KW SINGLE PHASE HYBRID INVERTER

Battery Type Selection:

5 Years Warranty On the Inverter when used with the:

- Onesto EB5000 Lithium-Ion
- Onesto EBM5000 LiFePO4 Battery
- Onesto EBD LiFePO4 Batteries Range
- LV
- Pylon Lithium-Ion Batteries
- Dyness Lithium-Ion
- UZ
- Vestwoods
- Pylon Force H1

Please visit www.mce.co.za for more compatible batteries

6KW SINGLE PHASE HYBRID INVERTER

MODEL	OST 6000HB-120
Efficiency	
Max efficiency (PV to AC)	97.3%
Max efficiency (BAT to AC)	94.0%
Input (PV)	
MAX PV Power	9000W
Max PV voltage	550V
Max input current (input A/input B)	15A / 15A
Max short current (input A/input B)	20A / 20A
Start operating voltage	30V
MPPT voltage range @full load	230V-480V
No. of MPPT trackers	2
String per MPP tracker	1
Input (BAT)	
Compatible battery type	Lithium-ion/Lead-acid
Nominal battery voltage	48V
Battery voltage range	40V-60V
Max. charge/discharge current	120A / 120A
Max. charge/discharge power	6000W / 6000W
Lithium battery charge curve	Self-adaption to BMS
Output (Grid)	
Nominal AC output power	6000W
Max.AC output power	6000VA
Max. AC output power (PF=1)	6000W
Max. AC output current	27.2A
Rated AC voltage	220V
AC voltage range	150V-300V (adjustable)
Rated grid frequency	50/60Hz
AC frequency range	45-55Hz / 55-65Hz (adjustable)
Grid connection	single phase
Power factor	> 0.99 @rated power (adjustable 0.8 LG - 0.8 LD)
THDI	<3%
Output (Back up)	
Nominal output voltage	230V
Nominal output frequency	50/60Hz
Nominal output power	6000W
Nominal output current	26A
Transfer time (ms)	10(typ) / 20(max)
THDV	<3% @100% R Load
Protection	
Protection category	Class I
DC switch	Support
Anti-islanding protection	Support
AC overcurrent protection	Support
AC short circuit protection	Support
DC reverse connection	Support
Surge Arrester	DC Type III, AC Type III
Insulation detection	Support
Leakage current protection	Support
PV overvoltage category	II
AC overvoltage category	III
General	
Max. operation altitude	4000m
Noise emission	<35dB
Ingress protection degree	IP65
Operating temperature range	-25°C~ +60°C
Relative humidity	0~100%
Cooling concept	Natural Cooling
Mounting	Wall bracket
Dimensions (W*H*D)	515*450*175mm
Weight (kg)	25
PV connection way	MC4/H4
Battery connection way	Dedicated DC connector
AC connection way (grid & back up)	Dedicated AC connector
HMI & COM	
Display	LED+APP
Communication interface	RS485/CAN(for BMS), RS485, USB, Ethernet, DRM/RS485 (for Meter), Optional: WIFI/GPRS
Certification	
Grid	VDE-AR-N4105, IEC 61727/62116, AS 4777.2, EN 50549-1
Safety	IEC62109-1&2, IEC62040-1, IEC62477-1
EMC	IEC61000-6-2/3
Warranty (years)	5/10 (optional)

Remarks: The range of output voltage and frequency may vary depending upon different grid codes. Specifications are subject to change without advance notice.



OST 10KHB-210

- 220 V Single phase, pure sine wave inverter
- Max efficiency 98%
- Battery efficiency 95%
- Max PV Power 15 KW
- Max. Charge/Discharge Current 210 A
- RS 485/CAN connection for BMS support
- Natural cooling design
- Built in AC & DC Surge Protection Class 2
- Overload/Over Temperature & Short Circuit protection
- Auto Reset
- Generator input connection
- Remote Configuration and upgrades
- 3 Built in MPPT trackers with 2 strings per Mppt
- WIFI Dongle for Monitoring via Onesto Solar APP
- IP 65
- 5 Year Warranty once connected on WIFI and Registered



10KW SINGLE PHASE HYBRID INVERTER



Android App



IOS App

Battery Type Selection:

5 Years Warranty On the Inverter when used with the:

- Onesto EB5000 Lithium-Ion
- Onesto EBM5000 LiFePO4 Battery
- Onesto EBD LiFePO4 Batteries Range
- LV
- Pylon Lithium-Ion Batteries
- Dyness Lithium-Ion
- UZ
- Vestwoods
- Pylon Force H1

Please visit www.mce.co.za for more compatible batteries

10KW SINGLE PHASE HYBRID INVERTER

MODEL	OST 10KHB-210
Efficiency	
Max. Efficiency (PV To AC)	98.0%
Max. Efficiency (Bat To AC)	95.0%
Input(PV)	
Max. PV Power	15000W
Max. Input Voltage	600V
Max. Input Current (PV-A/PV-B)	30A/22A/22A
Max short current (input A/input B) (A)	40A/30A/30A
Start operating voltage (V)	90V
MPPT Operating Voltage Range	70V-540V
No. of MPPT trackers	3
String per MPP tracker	2
Input (BAT)	
Compatible battery type	Lithium-ion/Lead-acid
Nominal battery voltage	48V
Battery voltage range	40V-64V
Max. charge/discharge current	210A/210A
Max. charge/discharge power	10000W/10000W
Lithium battery charge curve	Self-adaption to BMS
Input (Grid)	
Nominal AC input power	15000W
Max. AC input current	65.3A
Rated AC voltage	230V (Single phase)
Output (Grid)	
Nominal AC output power	10000W
Max.AC output power	11000VA
Max.AC output power (PF=1)	11000W
Max. AC output current	50A
Rated AC voltage	230V, L+N+PE
Rated grid frequency	50Hz / 60Hz
Grid connection	Single phase
Power factor	> 0.99 @rated power (adjustable 0.8 LD - 0.8 LG)
THDI	<3% (Rated Power)
Output (BackUp)	
Nominal output power	10000W
Nominal output voltage	230V, L+N+PE
Nominal output frequency	50/60Hz
Nominal output current	43.5A
Maximum power(1s)	20000VA
Nominal output voltage	230V, L+N+PE
Nominal output frequency	50Hz / 60Hz
Transfer time	10ms (typ) / 20ms (max)
THDV	<3% @100% R Load
Protection	
Protection category	Class I
DC switch	Support
Anti-islanding protection	Support
AC overcurrent protection	Support
AC short circuit protection	Support
DC reverse connection	Support
Surge Arrester	DC Type II, AC Type II
Insulation detection	Support
Leakage current protection	Support
Gen	Support
PV overvoltage category	II
AFCI	Optional
RSD	Optional
General	
Max. operation altitude	4000m
Noise emission	<45dB
Ingress protection degree	IP65
Operating temperature range	-25~60°C(>45°C derating)
Relative humidity	0~100%
Cooling concept	Fan Cooling
Mounting	Wall bracket
Dimensions (W*H*D)	420mm*800mm*240mm
Weight (kg)	37Kg
PV connection	Terminals
BAT connection	DC special connector
HMI & COM	
Display	LED
Communication interface	RS485/CAN (for BMS), DRM/RS485 (for Meter), RS485, USB, Optional: WIFI/GPRS/LAN
Certification	
Grid	NRS 0-97 / IEC61727 / IEC62116
Safety/EMC	IEC62109 / EN 61000
Warranty	5 Years

Remarks: The range of output voltage and frequency may vary depending upon different grid codes. Specifications are subject to change without advance notice.

OST 10000HB-T

- 400V Three phase, pure sine wave inverter
- Max efficiency 98.4%
- Battery efficiency 98%
- Max PV Power 15 KW
- High Voltage Battery
- Max. Charge/Discharge Current 50 A
- RS 485/CAN connection for BMS support
- Natural cooling design
- Built in AC & DC Surge Protection Class 2
- Overload/Over Temperature & Short Circuit protection
- Auto Reset
- Generator input connection
- Remote Configuration and upgrades
- 2 Built in MPPT trackers with 2+1 strings per Mppt
- WIFI Dongle for Monitoring via Onesto Solar APP
- IP 65
- 5 Year Warranty once connected on WIFI and Registered



10KW THREE PHASE HYBRID INVERTER



Battery Type Selection:

5 Years Warranty On the Inverter when used with the **Onesto EBH LiFePO4 Battery Range**

10KW THREE PHASE HYBRID INVERTER

MODEL	OST 10000 HB-T
Efficiency	
Max. efficiency (PV to AC)	98.4%
Eur. efficiency (PV to AC)	97.9%
Max. efficiency (BAT)	
Input (PV)	
MAX PV Power	15000W
Max PV voltage	
Max input current (input A/input B)	20A/30A
Max short current (input A/input B)	30A/40A
MPPT voltage range	160V-950V
No. of MPPT trackers	2
String per MPP tracker	1+2
Input (BAT)	
Compatible battery type	Lithium-ion / Lead Acid
Nominal battery voltage	200V-600V
Battery voltage range	150V-600V
Max. charge/discharge current	50A/50A
Max. charge/discharge power	15000W/10500W
Lithium battery charge curve	Self-adaption to BMS
Output (Grid)	
Nominal AC output power	10000W
Max. AC output power	11000VA
Max. AC output power (PF=1)	11000W
Max. AC output current	3*16.7A
Max. Single Phase power	5kW
Max. Current (Output)	22.7A
Apparent Power (Input)	15kVA
Maximum Current (Input)	3*25A
Rated AC voltage	380V / 400V / 415V, 3W+N+PE
AC voltage range	277V-520V (Adjustable)
Rated grid frequency	50Hz / 60Hz
AC frequency range	45Hz-55Hz/55Hz-65Hz (Adjustable)
Grid connection	Three phase
Power factor	>0.99 @rated power (Adjustable 0.8 LD - 0.8 LG)
THDI	<3% (Rated Power)
Output (Back up)	
Nominal output power	10000W
Nominal output current	3*15.2A
Max. single phase power	5kW
Max. single phase current	22.7A
Maximum power(5min)	12000VA
Maximum power(10s)	15000VA
Nominal output voltage	380V / 400V, 3W+N+PE
Nominal output frequency	50Hz / 60Hz
Transfer time	10ms (typ) / 20ms (max)
THDV	<3% (R Load), 5% (RCD Load)
Protection	
Anti-islanding protection	Support
AC overcurrent protection	Support
AC short circuit protection	Support
AC over-voltage protection	Support
Surge Arrester	DC Type II, AC Type II
Insulation detection	Support
GFCI	Support
AFCI	Optional
RSD	Optional
General	
Max. operation altitude	4000m (>2000m derating)
Noise emission	30dB
Ingress protection degree	IP65
Operating temperature range	-25 C ~45 C
Relative humidity	0-100%
Cooling concept	Natural Cooling
Mounting	Wall bracket
Dimensions (W*H*D)	530mm*550mm*212mm
Weight	32Kg
PV connection way	MC4 / H4
Battery connection way	Dedicated DC connector
HMI & COM	
Display	LED+APP (Bluetooth)
Communication interface	CAN/RS485 (for BMS), DMX/MQTT (for DI) / RS485 (for Meter) 1*DO, USB (Firmware upgrade), Optional: WIFI/GPRS/4G/Ethernet
Certification	
Grid	IEC 61727/8218, EN 50549-1, VDE 4105, AS 4777, CEI 0-21, CSIR 01011, R0807
Safety	IEC62109-1&2, IEC62477-1
Warranty	5 Years



2.5KW 24VDC OFF-GRID INVERTER

**Do Not Use On:
Geysers, Kettles, Hairdryers,
Motors, Pumps, microwaves**

- On-grid - Also known as grid-tie or grid-feed solar system.
- Off-grid - Known as a stand-alone power system (SAPS)
- Hybrid - Solar plus battery storage system with grid-connection

Off-Grid System

An Off-grid system is not linked to the electricity grid and therefore requires battery storage. In an off-grid system our solar technician design a system that has enough power generation and battery storage to meet your homes requirements even in the depth of winter when there is less sunlight.

The considerable cost of batteries means that off-grid systems are reasonably more expensive than on-grid system and so are usually only found in isolated areas that are far from any electricity grid. There is a growing market for battery storage.

Hybrid System

Due to the decreasing cost of battery storage, system that are already connected to the electricity grid can start taking advantage of battery storage as well. This means being able to accumulate solar energy that is generated during the day and used at night.

When the stored energy is exhausted, the grid is there as a backup, allowing consumers to have the best of both worlds.

VM II OFF-GRID INVERTER

VM II 2.5-24VDC

- Pure Sine Wave Inverter
- Output Factor 1
- Built-in 100A MPPT Solar Charge Controller
- Battery Equalization for Optimized battery Performance & Lifecycle
- Battery independent design
- Built-in anti-dust kit for harsh environment

MODEL	VM II 2.5-24VDC
RATED POWER	2500VA/2500W
INPUT	
Voltage	230 VAC
Selectable Voltage Range	170-280 VAC (For Personal Computers) ; 90-280 VAC (For Home Appliances)
Frequency Range	50 Hz/60 Hz (Auto sensing)
OUTPUT	
AC Voltage Regulation (Batt. Mode)	230VAC ± 5%
Surge Power	5000VA
Efficiency (Peak)	93%
Transfer Time	10 ms (For Personal Computers) ; 20 ms (For Home Appliances)
Waveform	Pure sine wave
BATTERY	
Battery Voltage	24 VDC
Floating Charge Voltage	27 VDC
Overcharge Protection	32 VDC
SOLAR CHARGER & AC CHARGER	
Maximum PV Array Open Circuit Voltage	450 VDC
Maximum PV Array Power	3000W
MPP Range @ Operating Voltage	60-400 VDC
Maximum Solar Charge Current	80 A
Maximum AC Charge Current	80 A
Maximum Charge Current	80 A
PHYSICAL	
Dimension, D x W x H (mm)	90 x 288 x 357
Net Weight (kgs)	6.5
Communication Interface	RS232
ENVIRONMENT	
Humidity	5% to 95% Relative Humidity (Non-condensing)
Operating Temperature	-10°C to 50°C
Storage Temperature	-15°C to 60°C

Product specifications are subject to change without further notice.

MKS OFF-GRID INVERTERS

MKS-3K-24VDC

- Pure Sine Wave Inverter
- Output Factor 1
- Built-in MPPT Solar Charge Controller
- Selectable Input Voltage Range For Home Appliances & Personal Computers
- Selectable Charging Current Based On Applications
- Configurable AC/Solar Input Priority Via LCD Setting
- Compatible To AC Mains or Generator Power
- Battery Equalization for Optimized battery Performance & Lifecycle



3KW 24VDC OFF-GRID INVERTER

MODEL	MKS-3K-24VDC
Rated Power	3000VA/3000W
Parallel Capability	No
INPUT	
Voltage	230VAC
Selectable Voltage Range	170-280VAC (For Personal Computers); 90-280VAC (For Home Appliances)
Frequency Range	50Hz/60Hz (Auto Sensing)
OUTPUT	
AC Voltage Regulation (Batt. Mode)	230vac \pm 5%
Surge Power	6000VA
Efficiency (Peak)	93%
Transfer Time	10ms (For Personal Computers); 20ms (For Home Appliances)
Waveform	Pure Sine Wave
BATTERY	
Battery Voltage	24VDC
Floating Charge Voltage	27VDC
Overcharge Protection	31VDC
SOLAR CHARGER & AC CHARGER	
Maximum PV Array Power	600W
MPPT Range @ Operating Voltage	30VDC - 66VDC
Maximum PV Array Open Circuit Voltage	75VDC
Maximum Solar Charge Current	25A
Maximum AC Charge Current	30A
Maximum Charge Current	55A
PHYSICAL	
Dimension, DxWxH (mm)	100 x 272 x 355
Net Weight (kgs)	7.4
ENVIRONMENT	
Humidity	5% to 95% Relative Humidity (Non-Condensing)
Operating Temperature	0°C to 55°C
Storage Temperature	-15°C to 60°C

Product specifications are subject to change without prior notice.

NEW!

300A BUSBAR ENCLOSURE IP65



BB-300

300A BUSBAR ENCLOSURE IP65	
PRODUCT CODE	BB-300
COMPONENTS	
ENCLOSURE	GR40030
BUSBAR INSULATOR (RED)	S842-3 RED
BUSBAR INSULATOR (BLACK)	S842-3 BLACK
BUSBAR	
SPECIFICATIONS	
IP RATING	IP65
DIMENSIONS	400 X 300 X 170
BUSBAR SIZE	30 X 5MM
AMPERAGE	300A

600A BUSBAR ENCLOSURE IP65



BB-600

600A BUSBAR ENCLOSURE IP65	
PRODUCT CODE	BB-600
COMPONENTS	
ENCLOSURE	GR40050
BUSBAR INSULATOR (RED)	S842-3 RED
BUSBAR INSULATOR (BLACK)	S842-3 BLACK
BUSBAR	
SPECIFICATIONS	
IP RATING	IP65
DIMENSIONS	400 X 300 X 170
BUSBAR SIZE	30 X 10MM
AMPERAGE	600A



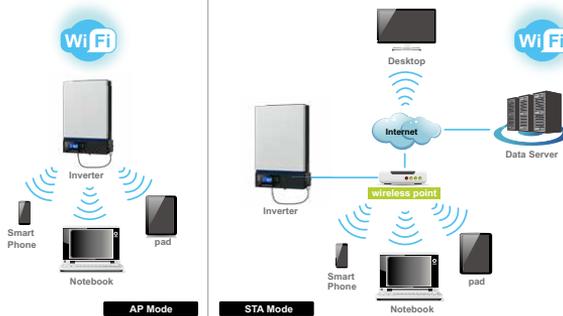
Embedded magnet attracted to the inverter

WIFI-MOD(AX)

- Real-time Dynamic Graphs of Inverter Data
- Cloud Storage for History Data & Event Log
- Remote Monitoring & Control of Multiple Inverters Via Mobile APP (iOS and Android)
- Parameter Settings Available (output setting, output priority setting, AC input range, battery setting and etc.)



WatchPower WiFi



Wi-Fi Module Specification

MODEL	Wi-Fi Module
Wifi Communication Protocol	802.11 b/g/n
Hardware Encryption	WEP, WPA/WPA2
Wifi Operation Frequency	2.4G
Wifi Wireless Gain	2.5dBi
Wifi Communication Distance	100 meters (open environment)
Maximum Transmit Rate of Wifi	72Mbps
Maximum Transmit Power of Wifi	18.5dbm (70mW)
Software WatchDog	Yes
Local Communication Interface	RS232
Network Layer Communication Protocol	Modbus TCP
Working Mode	AP/STA
Parameter Setting Way	Mobile APP
External Power Input	5V-12V
Power Consumption	2 watt (max.)
Operating Temperature	-20°C ~ 75°C
Operating Humidity	0 ~ 95%
Storage Temperature	-30°C to 80°C
Dimension, D x W x H (mm)	28 x 46 x 172
Net Weight (g)	120



Certification & Standards
IEC 61215, IEC 61730, Conformity to CE

**MONOCRYSTALLINE SOLAR
MODULE**

SPP-330 SERIES

Mono-crystalline 60Cells 300W-330W



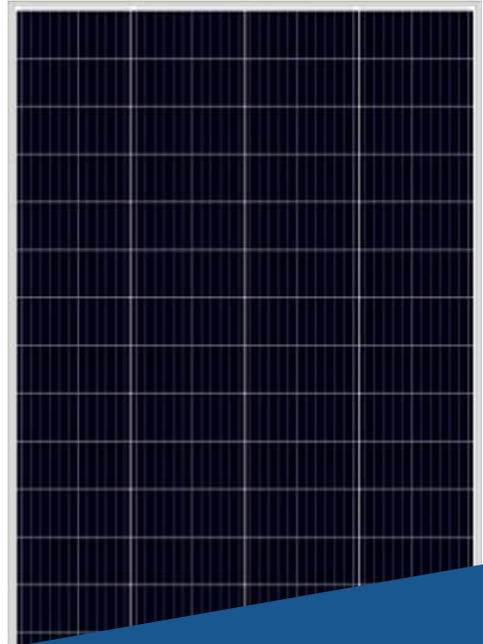
10-year product
workmanship warranty



10-year guarantee
for 90% rated power



25-year guarantee
for 80% rated power



Excellent power generation performance

Guaranteed 0~+5W positive rated power tolerance ensures more power generation every day



Stable mechanical performance

Passed rigorous hail test
Withstands 5400Pa snow and 2400Pa wind loads



Low-light Performance

Advanced glass and solar cell surface texturing allow for excellent performance in low-light environments.



Long weather resistance

Excellent anti-PID(Potential Induced Degradation)
Certified in fireproofing for safety



Lower temperature coefficient

Improved temperature coefficient decreases power loss in the high temperature application.



Superior quality control

ISO 9001:2015 Quality Management System
100% EL and appearance inspection



Certification & Standards
IEC 61215, IEC 61730, Conformity to CE

MONOCRYSTALLINE SOLAR MODULE

MONOCRYSTALLINE 60 CELLS

SOLAR MODULE SPP-330

ELECTRICAL DATA (STC)

Module	SPPxxx (300,305,310,320,330)				
	SPP-300	SPP-305	SPP-310	SPP-320	SPP-330
Peak Power Watts(Pmax/W)			0 ~ +5		
Power Output Tolerance(W)					
Maximum Power Voltage(Vmp/V)	34.98	35.34	35.58	36.06	36.54
Maximum Power Current(Imp/A)	8.58	8.63	8.72	8.90	9.08
Open Circuit Voltage(Voc/V)	41.1	41.34	41.61	42.15	42.15
Short Circuit Current(Isc/A)	9.08	9.11	9.19	9.35	9.51
Module Efficiency(%)	20.66	21.01	21.35	22.03	22.71

STC:Irradiance 1000W/m²,Cell Temperature 25°C,Air Mass AM1.5.

*Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

Maximum Power(Pmax/W)	225	228.75	232.5	240	247.5
Maximum Power Voltage(Vmp)	32.18	32.51	32.73	33.17	33.61
Maximum Power Current(Imp)	6.86	6.9	6.94	6.96	6.98
Open Circuit Voltage(Voc)	37.81	38.03	38.28	38.78	39.28
Short Circuit Current(Isc)	7.26	7.29	7.35	7.47	7.59

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

MECHANICAL DATA

Solar Cells	Monocrystalline 210 × 105mm
Cell Orientation	60 cells (5 × 12)
Module Dimensions	1650 × 880 × 35 mm
Weight	15.44 kg
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Tempered Glass
Backsheet	White
Frame	Silver / Black Anodized Aluminium Alloy
Junction Box	IP 67 or IP 68 rated
Cables	4.0mm ² 900 mm
Connector	MC4

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	44°C (±2°C)
Temperature Coefficient of Pmax	- 0.40%/°C
Temperature Coefficient of Voc	- 0.29%/°C
Temperature Coefficient of Isc	+0.048%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1000V DC (IEC) 1000V (UL)
Max Series Fuse Rating	DC (UL) 15A

WARRANTY

10 year Product Workmanship Warranty

25 year Linear Power Warranty

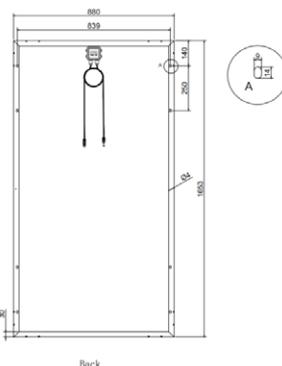
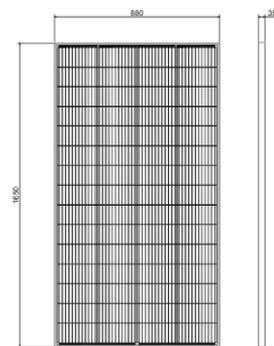
(Please refer to product warranty for details)

PACKAGING CONFIGURATION

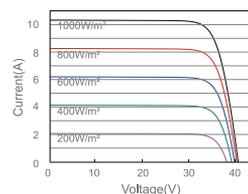
Modules per box: 31 pieces

Modules per 40' container: 952PCS

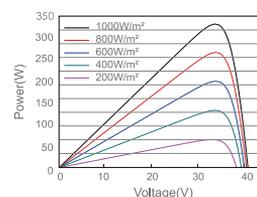
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(330W)



P-V CURVES OF PV MODULE(330W)



Solar Cells





Certification & Standards
IEC 61215, IEC 61730, Conformity to CE

MONOCRYSTALLINE SOLAR MODULE

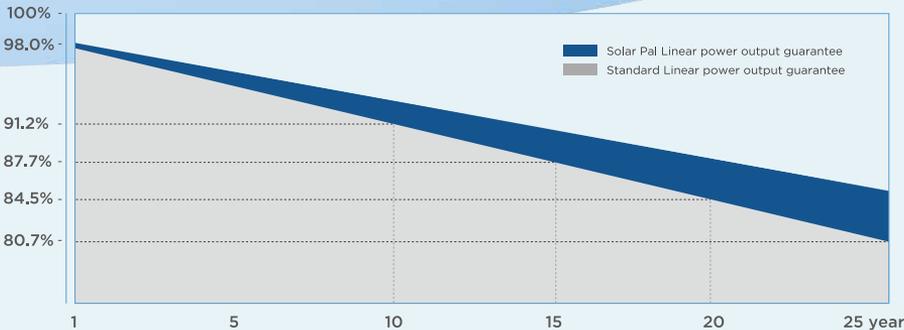
SPP-455

455W

144 Cells High Efficiency Low PERC with MBB & Half-cut Technology

Quality Guarantee

12-year Warranty for Materials and Processing
25-year Warranty for Extra Linear Power Output



20.9%
Max Module Eff.

0~+5W
Positive Tolerance

Complete System and Product Certifications

IEC 61215, IEC 61730, UL 61730
ISO 9001:2008: ISO Quality Management System
ISO 14001: 2004: ISO Environment Management System
OHSAS 18001: 2007 Occupational Health and Safety



* Specifications subject to technical changes and tests. Sunpal Solar reserves the right of interpretation.

Positive power tolerance (0~+5W) guaranteed

High module conversion efficiency (up to 20.9%)

Slower power degradation enabled by Low LID Mono PERC technology: first year <2%, 0.55% year 2-25

Solid PID resistance ensured by solar cell process optimization and careful module BOM selection

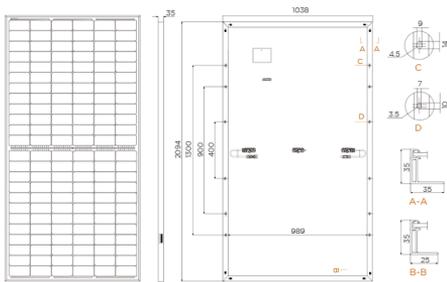
Reduced resistive loss with lower operating current

Higher energy yield with lower operating temperature

Reduced hot spot risk with optimized electrical design and lower operating current

SPP-455 455W

Design (mm)



*Units: mm *Tolerance: ±2mm

Cell Orientation	144 (6x24)
Junction Box	IP68, three diodes
Output Cable	4mm ² , 300mm in length, length can be customized
Glass	Single glass 3.2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight:	23.5kg±3%
Dimension	2094x1038x35mm
Packaging	30pcs per pallet 150pcs per 20'GP 660pcs per 40'ft Container

Operational Temperature	-40°C~+85°C
Power Output Tolerance	0~+5W
Voc & Isc Tolerance	±3%
Max. System Voltage	DC1500V(IEC/UL)
Max. Series Fuse Rating	20A
NOCT	45±2°C
Safety Class	II
Fire Rating	UL type 1 or 2
Max. Static Load(Front)	5400Pa
Max. Static Load(Back)	2400Pa

Electrical Characteristics

Model Number	SPP-450	
	STC	NOCT
Maximum Power (Pmax/W)	450	339.8
Open Circuit Voltage (Voc/V)	49.5	46.4
Short Circuit Current (Isc/A)	11.66	9.43
Voltage at Maximum Power (Vmp/V)	41.7	38.8
Current at Maximum Power (Imp/A)	10.92	8.75
Module Efficiency(%)	20.9	
Temperature Coefficient of Isc	+0.048%/°C	
Temperature Coefficient of Voc	-0.270%/°C	
Temperature Coefficient of Pmax	-0.350%/°C	

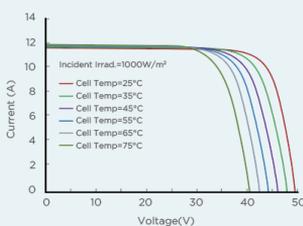
* STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25°C, Spectra at AM1.5

* NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/s

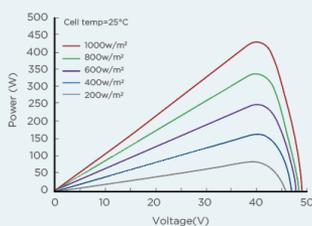
*Test uncertainty for Pmax: ±3%

I-V Curve

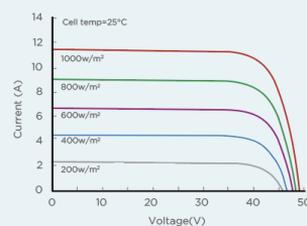
Current-Voltage Curve(SPP-450)



Current-Voltage Curve(SPP-450)



Current-Voltage Curve(SPP-450)





Certification & Standards
IEC 61215, IEC 61730, Conformity to CE

**MONOCRYSTALLINE SOLAR
MODULE**

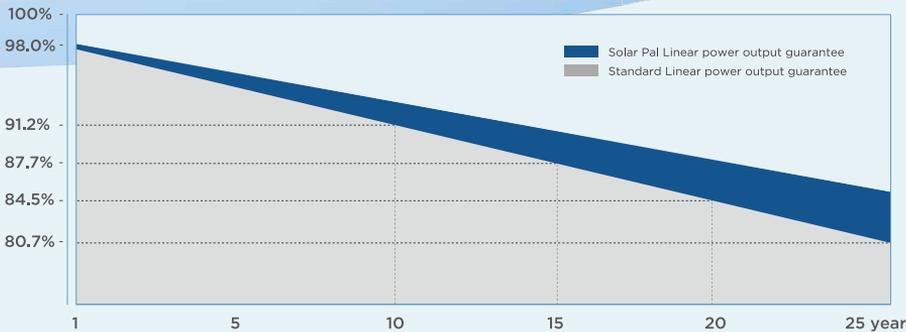
SPP-550

550W

**144 Cells Mono
PERC with MBB & Half-cut
Technology**

Quality Guarantee

12-year Warranty for Materials and Processing
25-year Warranty for Extra Linear Power Output



21.3%
Max Module Eff.

0~+5W
Positive Tolerance

Complete System and Product Certifications

IEC 61215, IEC 61730, UL 61730
ISO 9001:2008: ISO Quality Management System
ISO 14001: 2004: ISO Environment Management System
OHSAS 18001: 2007 Occupational Health and Safety



* Specifications subject to technical changes and tests. Sunpal Solar reserves the right of interpretation.

Positive power tolerance (0~+5W) guaranteed

High module conversion efficiency (up to 21.3%)

Slower power degradation enabled by Low LID Mono PERC technology: first year <2%, 0.55% year 2-25

Solid PID resistance ensured by solar cell process optimization and careful module BOM selection

Reduced resistive loss with lower operating current

Higher energy yield with lower operating temperature

Reduced hot spot risk with optimized electrical design and lower operating current

Made For The SPP Panels Only

DOMESTIC TILE ROOF MOUNTING KITS

CODE	NO OF PANELS
2RMKIT-TI	2
3RMKIT-TI	3
4RMKIT-TI	4
5RMKIT-TI	5



KIT INCLUDES

- Profiles
- Penetrating Tile Brackets
- Framed PV panel clamps & Fasteners for structure assembly

IBR ROOF MOUNTING KITS

CODE	NO OF PANELS
2RMKIT-IBR	2
3RMKIT-IBR	3
4RMKIT-IBR	4
5RMKIT-IBR	5



KIT INCLUDES

- Profiles
- Brackets For Installation Across The Rib
- Framed PV panel clamps & Fasteners for structure assembly

CORRUGATED ROOF MOUNTING KITS

CODE	NO OF PANELS
2RMKIT-COR	2
3RMKIT-COR	3
4RMKIT-COR	4
5RMKIT-COR	5



KIT INCLUDES

- Profiles
- Penetrating Corrugated Brackets
- Framed PV panel clamps & Fasteners for structure assembly

KLIPOCK ROOF MOUNTING KITS

CODE	NO OF PANELS
2RMKIT-KL	2
3RMKIT-KL	3
4RMKIT-KL	4
5RMKIT-KL	5



KIT INCLUDES

- Profiles
- Kliplock Brackets
- Framed PV panel clamps & Fasteners for structure assembly

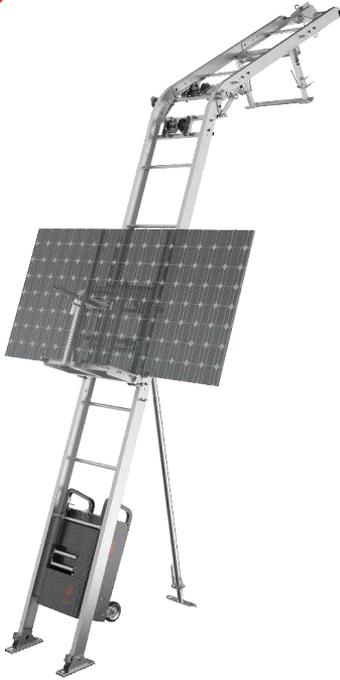
CALL US FOR GROUND, CARPORT, POLE MOUNTING & COMMERCIAL SOLUTIONS



NEW!

19 METER MATERIAL HOIST

MH03L250-EXPERT



- Rated Voltage - 230V
- Frequency - 50Hz
- Rated Power - 1.5kW
- Rated Load - 2500kg
- Lifting speed - 30m/min
- Lifting Height - 19m

The Lift Material Hoist is a portable lifting equipment that customizable solution for lifting various materials, including solar panels, batteries, etc.

The basic unit consists of a drive and control system, a load carrying device and a ladder guiding system. Using limited space, the Material Hoist stably and efficiently transports heavy materials to a designated height.



Inclined Slope



Scaffoldings

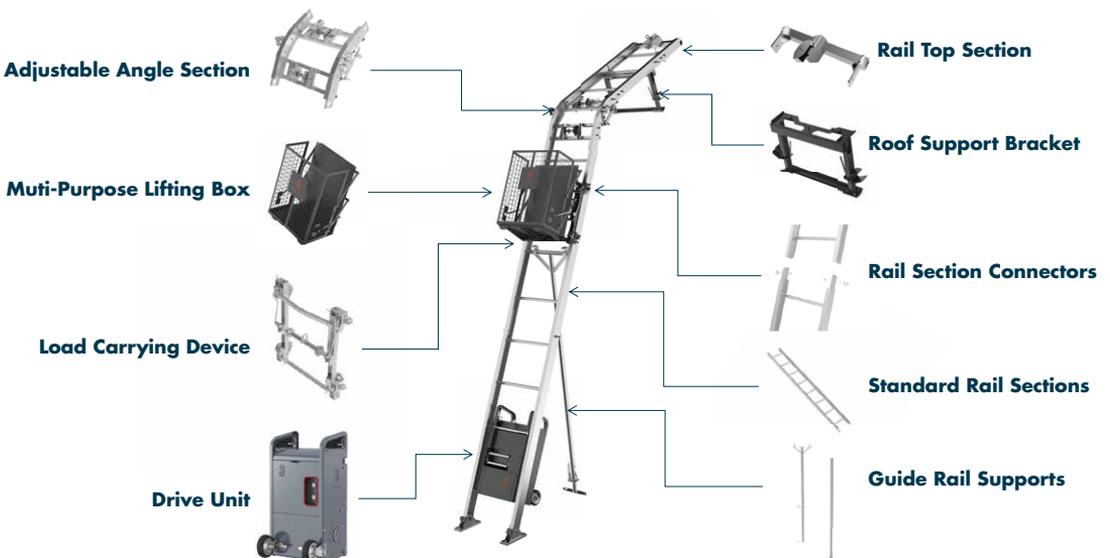


Flat Top



Lattice

MATERIAL HOIST COMPONENTS



NEW!



6-GSP-7Ah

Valve-regulated Lead Acid Battery Specification

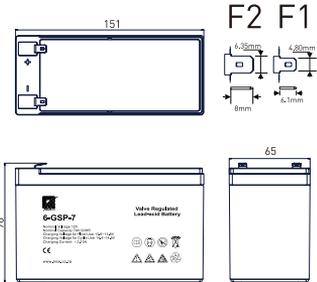
Features

- Maintenance free
- Safety and no leakage
- Excellent recharge and discharge performance
- Low self-discharge rate
- Adapts to high or low temperatures
- Good deep discharge performance
- Longer cycle life



Specification

Rated Voltage	12V
Numbers of cells	6 Cells
Capacity	7.0Ah@20hr-rate to 1.80V per cell @25°C
Weight	2.26kg
Internal Resistance	Approx. 23 mΩ
Terminal	F1 / F2
Max. Discharge Current	105A(5s)
Short Circuit Current	375A
Max. Charging Current	2.1A
Reference Capacity	C20 7.0AH C5 5.8AH C1 4.26AH
Design Life	6-8 years
Float Charging Voltage	13.6 V-13.8 V @ 25°C Temperature Compensation: -20mV/°C/Cell
Cycle Use Voltage	14.4 V-14.9 V @ 25°C Temperature Compensation: -30mV/°C/Cell
Operating Temperature Range	Discharge: -15°C-50°C Charge: 0°C-40°C Storage: -15°C-40°C
Normal Operating Temperature Range	25°C±5°C
Self Discharge	Less than 3% at 25°C per month
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



Length	151±2mm (5.9 inches)
Width	65±1mm (2.6 inches)
Height	94±1mm (3.7 inches)
Total Height	98 ±1mm (3.9 inches)

Constant Current Discharge Characteristics: A[25°C]

F.V/Time	5min	10min	15min	20min	30min	45min	1h	3h	5h	10h	20h
1.80V/cell	19.2	13.7	11.3	9.20	6.65	4.80	3.83	1.66	1.14	0.653	0.350
1.75V/cell	21.5	14.9	12.0	9.70	6.92	4.99	3.98	1.71	1.16	0.663	0.357
1.70V/cell	23.4	15.9	12.8	10.2	7.18	5.12	4.05	1.75	1.19	0.672	0.361
1.65V/cell	25.5	16.8	13.4	10.6	7.43	5.28	4.17	1.77	1.21	0.680	0.365
1.60V/cell	26.8	17.6	13.8	10.9	7.64	5.42	4.26	1.81	1.23	0.690	0.371

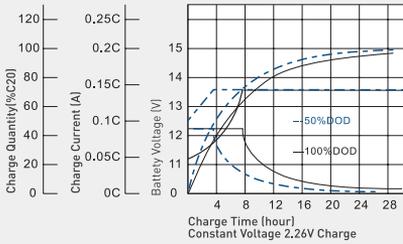
Constant Power Discharge Characteristics: WPC[25°C]

F.V/Time	5min	10min	15min	20min	30min	45min	1h	3h	5h	10h	20h
1.80V/cell	35.9	25.8	21.5	17.7	12.9	9.37	7.52	3.30	2.27	1.31	0.704
1.75V/cell	39.8	28.0	22.8	18.6	13.4	9.72	7.79	3.37	2.31	1.33	0.716
1.70V/cell	42.8	29.5	24.0	19.3	13.8	9.89	7.88	3.42	2.34	1.33	0.718
1.65V/cell	45.7	30.7	24.8	19.8	14.1	10.1	8.02	3.45	2.36	1.34	0.720
1.60V/cell	47.0	31.5	25.1	20.1	14.3	10.3	8.13	3.50	2.39	1.35	0.728

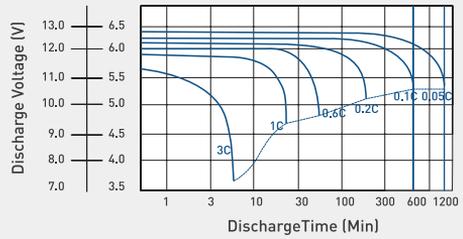
6-GSP-7Ah

Valve-regulated Lead Acid Battery Specification

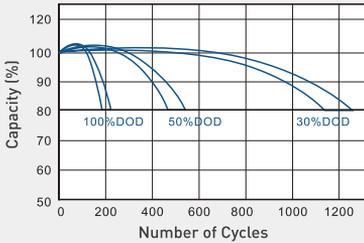
Charge Characteristics for Float Use @ 25°C/77°F



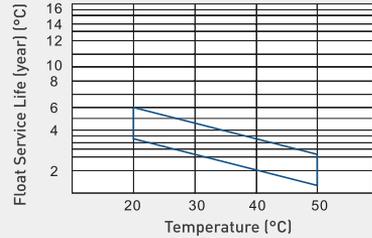
Discharge Characteristics at Various Rates @ 25°C/77°F



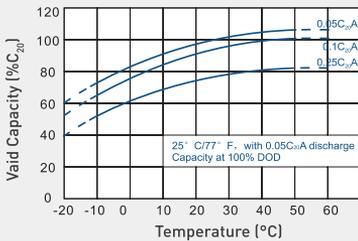
Cycle Life in Relation to Depth of Discharge



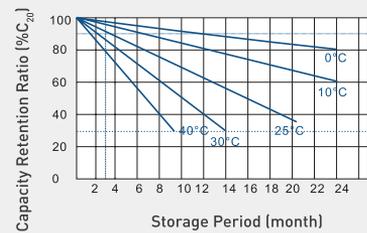
Float Service Life



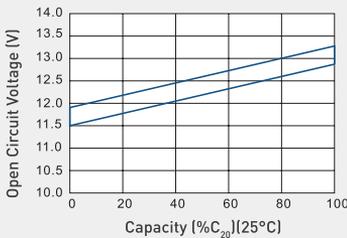
Temperature and Valid Capacity



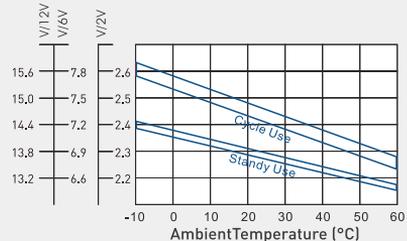
Self Discharge Characteristics



Capacity and Open Circuit Voltage



Relationship between Charging Voltage and Temperature





6-GSP-9Ah

Gel Battery Specification

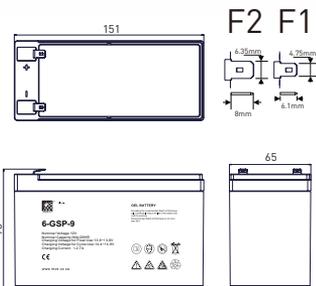
Features

- Maintenance free
- Safety and no leakage
- Excellent recharge and discharge performance
- Low self-discharge rate
- Adapt to high or low temperature
- Good deep discharge performance
- Longer cycle life



Specification

Rated Voltage	12V
Numbers of cells	6 Cells
Capacity	9.0Ah@20hr-rate to 1.80V per cell @25°C
Weight	2.7kg
Internal Resistance	Approx. 23 m
Terminal	F1 / F2
Max. Discharge Current	135A(5s)
Short Circuit Current	450A
Max. Charging Current	2.7A
Reference Capacity	C20 9.0AH C5 8.3AH C1 5.89AH
Design Life	6-8 years
Float Charging Voltage	13.6 V-13.8 V @ 25°C Temperature Compensation: -20mV/°C/Cell
Cycle Use Voltage	14.4 V-14.9 V @ 25°C Temperature Compensation: -30mV/°C/Cell
Operating Temperature Range	Discharge: -15°C-50°C Charge: 0°C-40°C Storage: -15°C-40°C
Normal Operating Temperature Range	25°C±5°C
Self Discharge	Less than 3% at 25°C per month
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



Length	151±2mm [5.9 inches]
Width	65±1mm [2.6 inches]
Height	94±1mm [3.7 inches]
Total Height	98 ±1mm [3.9 inches]

Constant Current Discharge Characteristics: A[25°C]

F.V/Time	5min	10min	15min	20min	30min	45min	1h	3h	5h	10h	20h
1.80V/cell	25.60	18.70	14.60	12.40	9.56	6.94	5.63	2.50	1.66	0.93	0.450
1.75V/cell	28.80	20.50	16.00	13.30	9.92	7.20	5.89	2.55	1.70	0.96	0.505
1.70V/cell	31.70	22.40	17.10	14.00	10.30	7.49	6.08	2.62	1.74	0.97	0.514
1.65V/cell	35.00	24.20	18.10	14.90	10.90	7.68	6.22	2.73	1.79	0.99	0.521
1.60V/cell	38.60	26.20	19.40	15.80	11.50	8.00	6.28	2.82	1.85	1.01	0.524

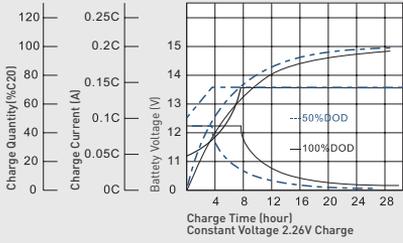
Constant Power Discharge Characteristics: WPC(25°C)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	3h	5h	10h	20h
1.80V/cell	46.20	34.10	26.90	23.00	17.90	13.20	10.80	4.85	3.23	1.84	0.989
1.75V/cell	51.00	36.90	29.10	24.50	18.50	13.60	11.30	4.92	3.31	1.88	0.998
1.70V/cell	54.60	39.30	30.60	25.60	19.10	14.10	11.60	5.05	3.38	1.92	1.015
1.65V/cell	59.40	42.00	32.30	26.90	20.00	14.30	11.80	5.24	3.47	1.96	1.027
1.60V/cell	64.00	44.60	34.00	28.40	21.00	14.80	11.80	5.38	3.57	1.98	1.032

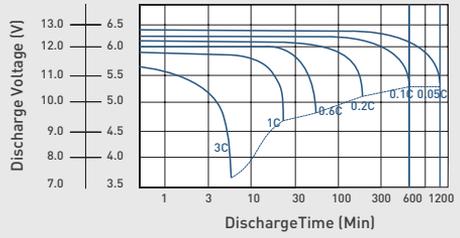
6-GSP-9Ah

Gel Battery Specification

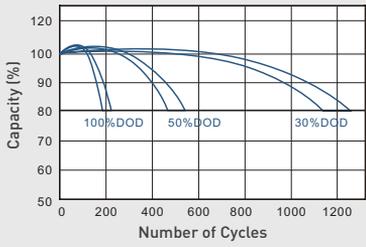
Charge Characteristics for Float Use @ 25°C/77°F



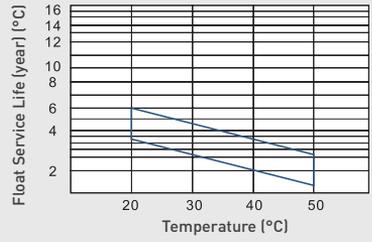
Discharge Characteristics at Various Rates @ 25°C/77°F



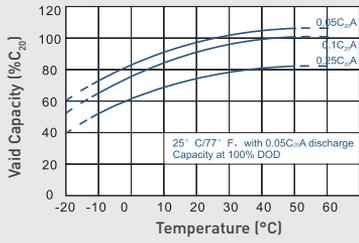
Cycle Life in Relation to Depth of Discharge



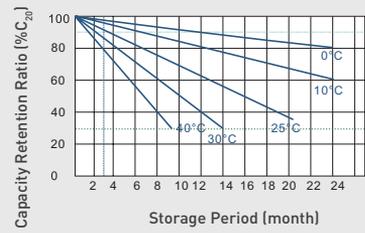
Float Service Life



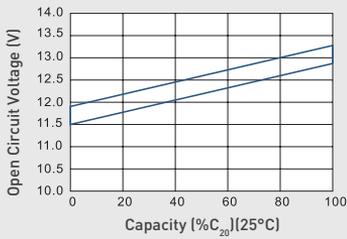
Temperature and Valid Capacity



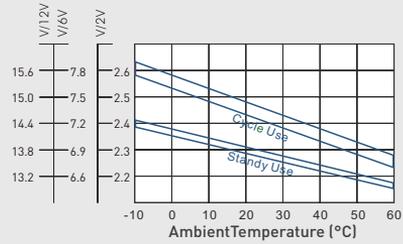
Self Discharge Characteristics



Capacity and Open Circuit Voltage



Relationship between Charging Voltage and Temperature



Specifications		
Nominal Voltage 1		2 V
Capacity (25°C)	10HR(10.8V)3	3A h
	5HR(10.5V)	28.9Ah
	1HR(9.60V)	20.7Ah
Dimension	Length	195 ± 2mm (7.68inch)
	Width	130 ± 1mm (5.12inch)
	Height	155 ± 2mm (6.10inch)
	Total Height	T7: 180 ± 2mm (7.09inch) T9: 166 ± 2mm (6.54inch)
Approx. Weight		10kgs (22.05lbs) ± 4%
Terminal type		T7/T9
Internal resistance (Fully charged, 25°C)		Approx. 10m Ω
Capacity affected by temperature (10HR)	40°C	102%
	25°C	100%
	0°C	85%
	-15°C	65%
Self-discharge (25°C)	3 month R	Remaining Capacity: 91%
	6 month R	Remaining Capacity: 82%
	12 month R	Remaining Capacity: 65%
Nominal operating temperature		25°C ± 3°C (77°F ± 5°F)
Operating temperature range	Discharge	-15°C ~ 50°C (5°F ~ 122°F)
	Charge	-10°C ~ 50°C (14°F ~ 122°F)
	Storage	-20°C ~ 50°C (-4°F ~ 122°F)
Float charging voltage(25°C)		13.50 to 13.80V Temperature compensation: -18mV/°C
Cyclic charging voltage(25°C)		14.50 to 14.90V Temperature compensation: -30mV/°C
Maximum charging current		9.9A
Terminal material		T7: Lead, T9: Copper
Maximum discharge current		330A(5 sec.)
Designed floating life(20°C)		7~10 years



SOLAR PAL

O-6-GSP(G)-33AH

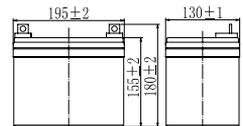
AGM BATTERY

Features

- Maintenance free
- Safety and no leakage
- Excellent recharge and discharge performance
- Low self-discharge rate
- Adapt to high or low temperature
- Good deep discharge performance
- Longer cycle life



- ◆ Absorbent glass mat technology
- ◆ Recognized by RoHS& CE;
- ◆ ABS container.



Constant Current Discharge (Amps) at 25°C

F.V/TIME	10min	15min	30min	60min	2h	3h	4h	5h	8h	10h	20h
9.60V	70.7	55.0	33.3	20.71	2.18	.426	.905	.894	.043	.361	.76
9.90V	68.6	53.7	32.7	20.41	2.08	.376	.865	.864	.023	.351	.76
10.2V	65.7	51.7	31.7	19.81	1.98	.316	.815	.823	.993	.341	.76
10.5V	62.9	49.9	30.9	19.41	1.78	.256	.775	.783	.963	.321	.74
10.8V	59.4	47.3	29.8	18.81	1.48	.006	.565	.603	.843	.301	.73

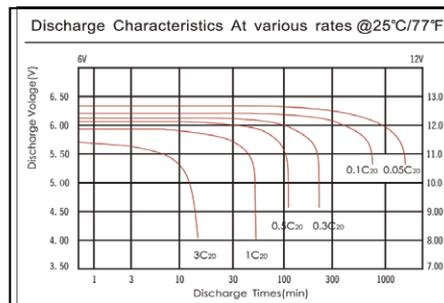
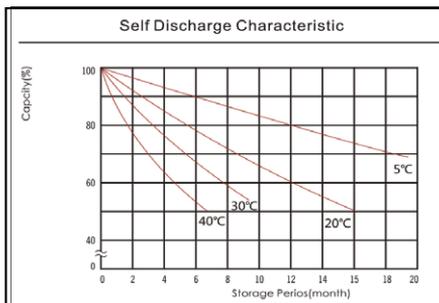
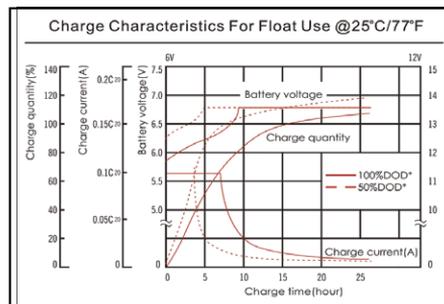
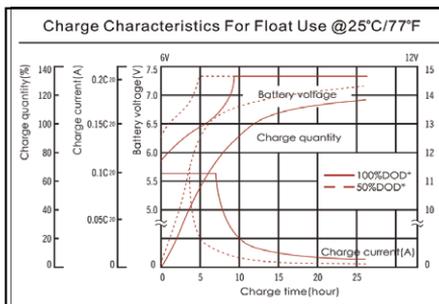
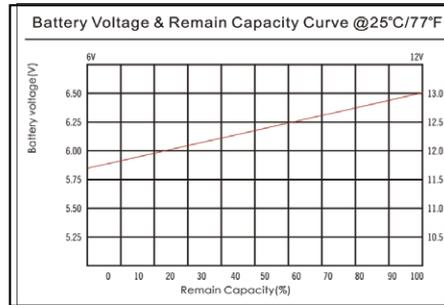
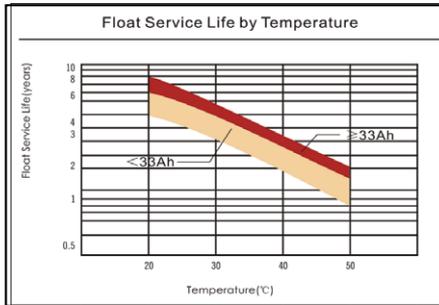
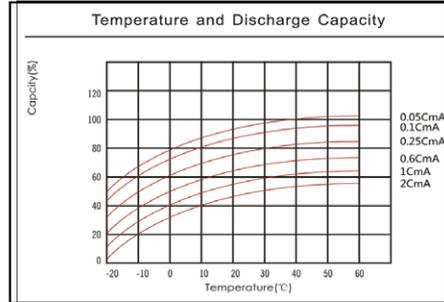
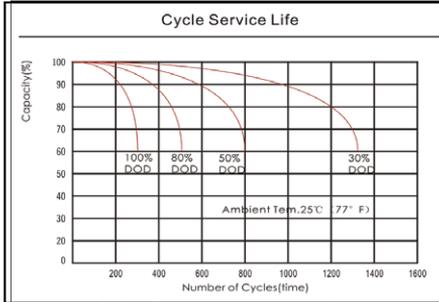
Constant Power Discharge (Watts) at 25°C

F.V/TIME	10min	15min	30min	60min	2h	h3	h4	h5	h8	h1	0h	20h
9.60V7	63	6043	74	2361	40	99.0	81.1	69.6	48.0	40.1	21.2	
9.90V7	41	5893	66	2321	39	98.4	80.7	69.2	47.7	40.0	21.1	
10.2V	7105	68	3552	26	138	97.7	80.1	68.7	47.4	39.9	21.1	
10.5V	679	5483	47	222	136	97.0	79.6	68.3	47.0	39.7	20.9	
10.8V	6415	19	3342	15	132	94.1	77.2	66.2	45.6	39.4	20.8	

Note: The above characteristics data can be obtained within three charge/discharge cycles.

O-6-GSP(G)-33AH

Gel Battery Specifications



NEW!

**SOLAR PAL
BATTERY**

6-GSP(G)- 100Ah

Gel Battery Specification

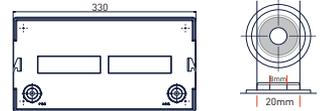
Features

- Maintenance free
- Safety and no leakage
- Excellent recharge and discharge performance
- Low self-discharge rate
- Adapt to high or low temperature
- Good deep discharge performance
- Longer cycle life



Specification

Rated Voltage	12V
Numbers of cells	6 Cells
Capacity	100Ah@10 hr-rate to 1.80V per cell @25°C
Weight	30.8kg
Internal Resistance	Approx. 6m
Terminal	M8
Max. Discharge Current	1500A(5s)
Short Circuit Current	5000A
Max. Charging Current	25A
Reference Capacity	C10 100.0AH C3 74.6AH C1 56.8AH
Design Life	10-15 years
Float Charging Voltage	13.6 V-13.8 V @ 25°C Temperature Compensation: -20mV/°C/Cell
Cycle Use Voltage	14.4 V-14.9 V @ 25°C Temperature Compensation: -30mV/°C/Cell
Operating Temperature Range	Discharge: -20°C-60°C Charge: 0°C-50°C Storage: -20°C-60°C
Normal Operating Temperature Range	25°C±5°C
Self Discharge	Less than 3% at 25°C per month
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



Length	330±2mm (13.8 inches)
Width	173±1mm (6.8 inches)
Height	217±1mm (8.9 inches)
Total Height	222±1mm (8.7 inches)

Constant Current Discharge Characteristics: A(25°C)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	3h	5h	10h	20h
1.80V/cell	109.49	83.84	63.16	52.88	32.88	24.86	17.40	14.58	11.64	10.00	5.42
1.75V/cell	123.05	92.20	68.25	56.61	34.92	26.21	18.08	15.03	11.98	10.17	5.54
1.70V/cell	132.54	98.76	72.43	59.89	36.95	27.34	18.64	15.59	12.32	10.43	5.60
1.65V/cell	137.97	102.60	75.03	62.15	37.97	28.14	18.98	15.82	12.54	10.55	5.66
1.60V/cell	149.49	109.83	80.56	65.99	39.44	29.27	19.66	16.27	12.77	10.77	5.74

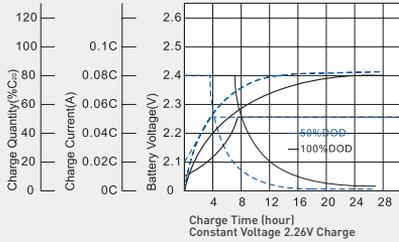
Constant Power Discharge Characteristics: WPC(25°C)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	3h	5h	10h	20h
1.80V/cell	206.78	160.00	121.47	102.49	63.95	48.47	34.24	28.70	23.05	19.89	10.81
1.75V/cell	229.83	174.46	130.40	109.04	67.57	51.07	35.48	29.72	23.73	20.23	11.02
1.70V/cell	244.97	185.20	137.51	114.80	71.30	52.99	36.50	30.62	24.41	20.68	11.14
1.65V/cell	252.09	190.40	141.36	118.42	72.77	54.46	37.06	31.07	24.75	20.90	11.24
1.60V/cell	270.17	201.92	150.73	125.08	75.37	56.38	38.19	31.75	25.08	21.36	11.41

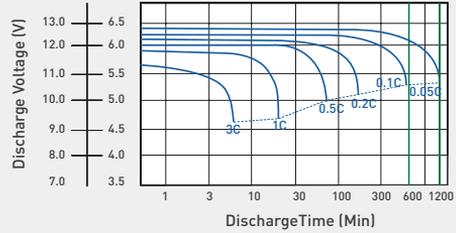
6-GSP(G)-100Ah

Gel Battery Specification

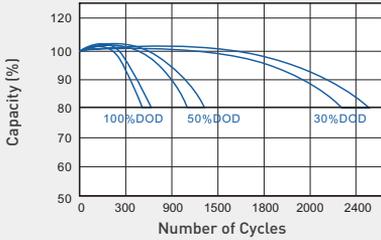
Charge Characteristics for Float Use @ 25°C/77°F



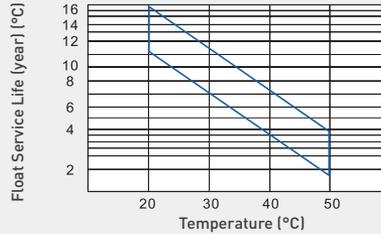
Discharge Characteristics at Various Rates @ 25°C/77°F



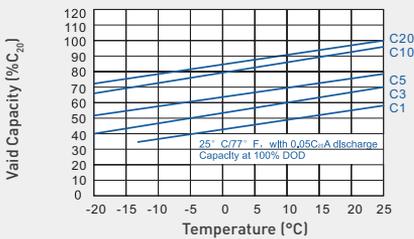
Cycle Life in Relation to Depth of Discharge



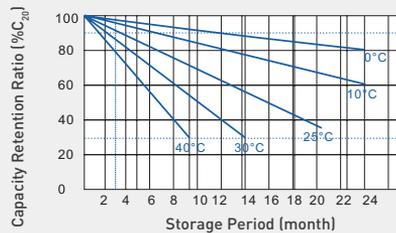
Float Service Life



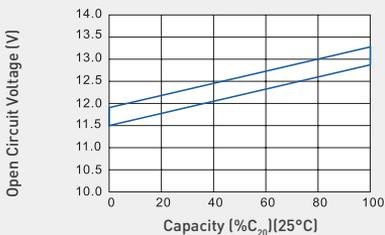
Temperature and Valid Capacity



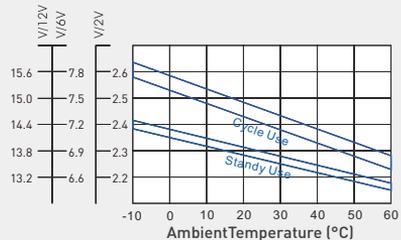
Self Discharge Characteristics



Capacity and Open Circuit Voltage



Relationship between Charging Voltage and Temperature



NEW!


6-GSP(G)- 200Ah

Gel Battery Specification

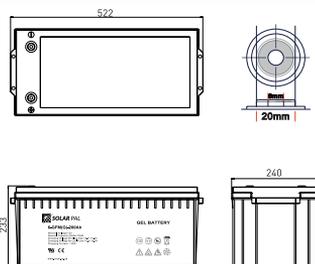
Features

- Maintenance free
- Safety and no leakage
- Excellent recharge and discharge performance
- Low self-discharge rate
- Adapt to high or low temperature
- Good deep discharge performance
- Longer cycle life



Specification

Rated Voltage	12V
Numbers of cells	6 Cells
Capacity	200Ah@10hr-rate to 1.80V per cell @25°C
Weight	62.4kg
Internal Resistance	Approx. 3.5mΩ
Terminal	M8
Max. Discharge Current	3000A(5s)
Short Circuit Current	10000A
Max. Charging Current	50A
Reference Capacity	C10 200.0AH C3 144.7AH C1 110.1AH
Design Life	10-15 years
Float Charging Voltage	13.6 V-13.8 V @ 25°C Temperature Compensation: -20mV/°C/Cell
Cycle Use Voltage	14.4 V-14.9 V @ 25°C Temperature Compensation: -30mV/°C/Cell
Operating Temperature Range	Discharge: -20°C-60°C Charge: 0°C-50°C Storage: -20°C-60°C
Normal Operating Temperature Range	25°C±5°C
Self Discharge	Less than 3% at 25°C per month
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



Length	522±2mm [20.6 inches]
Width	240±1mm [9.4 inches]
Height	219±1mm [8.6 inches]
Total Height	223±1mm [8.8 inches]

Constant Current Discharge Characteristics : AI(25°C)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	3h	5h	10h	20h
1.80V/cell	212.97	163.08	122.75	102.86	63.96	48.24	33.85	29.23	23.30	20.00	10.99
1.75V/cell	239.34	179.34	132.75	110.11	67.80	50.99	35.16	30.22	24.07	20.44	11.21
1.70V/cell	257.80	192.09	140.99	116.48	71.87	53.08	36.26	31.32	24.73	20.88	11.32
1.65V/cell	268.35	199.56	145.93	120.88	73.74	54.84	37.03	31.76	25.16	21.21	11.43
1.60V/cell	290.77	213.63	156.81	128.35	76.70	57.03	38.13	32.53	25.60	21.54	11.65

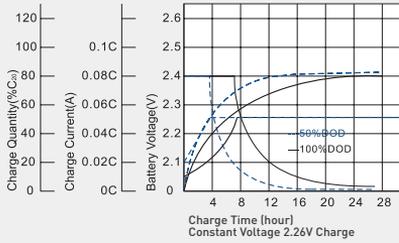
Constant Power Discharge Characteristics : WPC(25°C)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	3h	5h	10h	20h
1.80V/cell	402.31	311.32	236.37	199.23	124.51	94.29	66.59	57.58	46.15	39.89	21.87
1.75V/cell	447.14	339.23	253.63	212.20	131.43	99.34	68.90	59.45	47.58	40.66	22.31
1.70V/cell	476.37	360.22	267.36	223.19	138.68	103.19	70.88	61.43	48.90	41.54	22.53
1.65V/cell	490.33	370.33	274.95	230.33	141.54	105.93	72.20	62.31	49.56	41.98	22.75
1.60V/cell	525.38	392.64	293.19	243.19	146.59	109.67	74.18	63.52	50.33	42.75	23.08

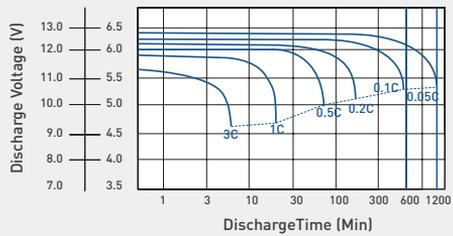
6-GSP(G) -200Ah

Gel Battery Specification

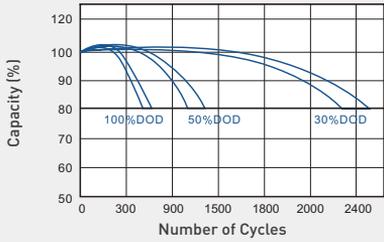
Charge Characteristics for Float Use @ 25°C/77°F



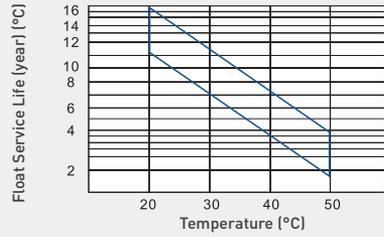
Discharge Characteristics at Various Rates @ 25°C/77°F



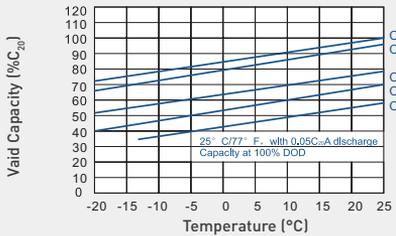
Cycle Life in Relation to Depth of Discharge



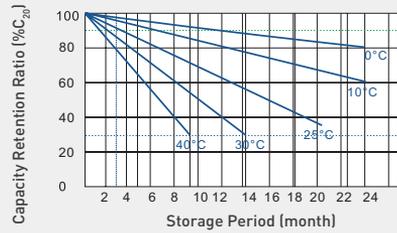
Float Service Life



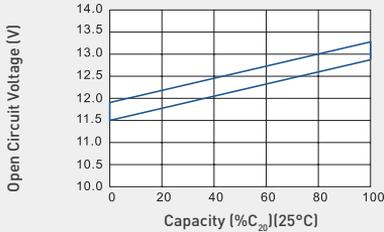
Temperature and Valid Capacity



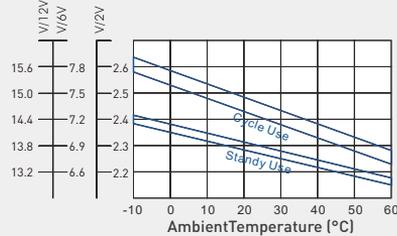
Self Discharge Characteristics



Capacity and Open Circuit Voltage



Relationship between Charging Voltage and Temperature



NEW!

100AH GEL BATTERY CABINET

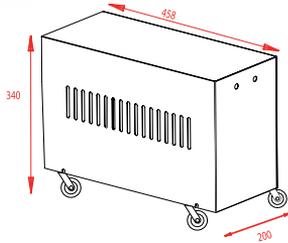


1GBB

- One Level
- 4 Wheels
- Cold Rolled Steel
- 458 x 200 x 340
- Black

**Can Only Store
1 x 100AH Battery**

SIZE:



NEW!

2 X 100AH GEL BATTERY CABINET

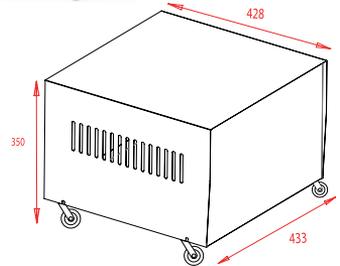


2GBB

- One Level
- 4 Wheels
- Cold Rolled Steel
- 428 x 433 x 350
- Black

**Can Only Store
2 x 100AH Batteries**

SIZE:



REFER TO PAGES 29-30 FOR BATTERIES & PAGES 4-5 FOR INVERTERS



PORTABLE BATTERY BOXES



MCE-BB-HO

1 x 60A Fuse, 2 x 12V DC Power Socket
2 x 5V USB Charger Sockets (1 x 2.1A & 1 x 1A)
1 x 12V Digital voltmeter, 1 x 16A Circuit Breaker Switch
(For Sockets), Positive & Negative Terminals.

BATTERY EXCLUDED

SUITABLE BATTERY :
325 x 200 x 185 ≤ 100Ah

Suitable For :
• Home Use
• Loadshedding
• Powering Essential Appliances
& Devices.

Must Be Connected To A Suitable
Inverter.



MCE-BB-OD

1 x 60A Fuse, 1 x 12V DC Power Socket
2 x 5V USB Charger Sockets (2 x 2.4A),
1 x 12V Digital Voltmeter ,1 x 16A Circuit Breaker Switch
(For Sockets,) 2 x 50A Anderson Sockets, Positive & Negative
Terminals

BATTERY EXCLUDED

SUITABLE BATTERY :
325 x 200 x 185 ≤ 100Ah

**Supplied with two extra 50A Anderson connectors for connecting
devices or appliances, e.g 12VDC Fridge, Solar Controller for Solar Panel, etc.**

Suitable For :
• Outdoor Use
• Camping Fridges 12VDC
• Powering Cell Phones, Tables &
Laptops
• Can Be Charged By Solar Panel &
Controller
(To Be Bought Separately).

Must Be Connected To A Suitable
Inverter.

- ONLY DISCHARGE THE BATTERY TO IT'S MANUFACTURER'S DEPTH OF DISCHARGE (D.O.D.) SPECIFICATIONS PER CYCLES
- ADHERE TO BATTERY MANUFACTURERS MAINTENANCE ROUTINE SHOULD YOUR CHOICE OF BATTERY BE ONE THAT REQUIRES MAINTENANCE.
- TO WORK OUT THE RUNNING TIME OF YOUR BATTERY USE THE FOLLOWING CALCULATION:
BATTERY CAPACITY (100AH) X INPUT VOLTAGE (12V) DIVIDED BY LOAD POWER (600W) 100AH X 12V ÷ 600W = 2 HOURS BATTERY RUNNING TIME.
EXAMPLE: SHOULD THE BATTERY MANUFACTURER RECOMMEND A D.O.D. OF 50% THEN YOU SHOULD ONLY RUN THE BATTERY FOR 1 HOUR AT 600W TO KEEP WITHIN THE BATTERY'S
D.O.D. SPECIFICATION AND SO AS TO NOT SHORTEN YOUR BATTERY'S LIFESPAN.

FOLDABLE TROLLEY



MCE-TROL

Foldable Aluminium Trolley
Perfect For Moving Your Battery Box Around.
Max Weight: 70kg

PWM SOLAR CHARGE CONTROLLER

CODE	MAX CHARGING CURRENT
MCESC-1210	10A
MCESC-1220	20A
MCESC-1230D	30A



**MCESC-1210/
MCESC-1220**

FEATURES:

- Built-In Industrial Micro Controller.
- LCD Display.
- Full 3 Stage PWM Charge Management.
- Built-In Short-Circuit Protection, Open Circuit Protection, Reverse Protection & Overload Protection.
- Dual Mosfet Reverse Current Protection, Low Heat Production.
- 2 x USB Charging Ports (**MCESC-1210 & 1220 Only**)
- Can Auto Detect 12VDC or 24VDC System Voltage.
- Adjustable Parameters.



MCESC-1230D

FEATURES:

- Can Auto Detect 12VDC or 24VDC System Voltage
- Large Easy To Read LCD Display With Menu To Show: Battery Voltage, PV Charge Current In Amps, Load Discharge Current In Amps, Total PV Charge Current In Ah, Total PV Discharge Current In Ah.
- 3 Settable Sub-Menus: Constant Voltage charging, Low Voltage Disconnect & Low Voltage Re-Connect.
- Full Electronic Protection (Reverse Polarity, Over Current, Short Circuit, Over Temperature, Reverse Current).
- Temperature Compensated, 3 Stage I-U Curve Charge Regulation.
- Dual Terminals For Solar Panels Input.
- Able To Charge Lead Acid, AGM and GEL batteries.

SYSTEM CONNECTION:

1. Connect The Battery To The Charger Regulator - Plus & Minus.
2. Connect the Photovoltaic Module To The Regulator - Plus & Minus.
3. Connect The Load To The Charge Regulator - Plus & Minus.

IMPORTANT:

- The Reverse Order Applies When Disconnecting The Unit.
- An Improper Sequence Order Will Damage The Controller.
- **Not Suitable For Lithium Iron Battery Charging**



CODE	MAX CHARGING CURRENT	INPUT AC	OUTPUT DC
MCE3-1210	10A	190-265V	12V
MCE3-1220	20A	190-265V	12V
MCE3-2410	10A	190-265V	24V

NOT SUITABLE FOR LITHIUM BATTERIES

FEATURES:

- On/Off Switch.
- Wide Single Phase Range: It Is Able To Handle A Wide AC Single Phase Range.
- Battery Status Indicators: Red LED displays "Fault"
Green LED displays "Power On"
White LED (Dual Colour) Red Indicates Charging, While Green Displays Float Charge.
- Short Circuit Protection : Charger Output Cuts Off Automatically When Reverse Polarity Occurs (Indicated by a blown Fuse).
- Overload Protection: Charger Output Cuts Off Automatically When Overload Condition Occurs.
- Overcharge Protection: Constant Voltage & Constant Current Output Prevent Overcharging.
- Compact High Frequency Technology & Reliability.
- Strong Ergonomics Aluminium Housing With Excellent Cooling Efficiency.
- Soft Start Bulk Charge

AUTOMATIC 3 STAGE BATTERY CHARGER



CODE	MAX CHARGING CURRENT	INPUT AC	OUTPUT DC
MCE7-1210	10A	190-265V	12V
MCE7-1220	20A	190-265V	12V
MCE7-2410	10A	190-265V	24V
MCE7-2420	20A	190-265V	24V

NOT SUITABLE FOR LITHIUM BATTERIES

AUTOMATIC 7 STAGE BATTERY CHARGER WITH SWITCHING MODE

FEATURES:

- LED Digital Display: U: Battery Voltage, I: Charge Current, C: 7 Charging Stage, P: Overheat Protection.
- LED Indicators: AGM/GEL/WET Battery.
- Numerous Protection Functions: Overheat, Overcharge, Short Curcuit, Soft Start, Internal Temperature Compensation, Reverse Polarity & Overcharge Protection.
- 7 Stage Charging: C-1: Desulphation, C-2: Soft Start, C-3: Bulk (Constant Current), C-4: Absorption (Constant Voltage), C-5: Battery Test, C-6: Recondition & C-7: Float.

NEW!

**SP-20A60W
SP-40A80W | SP-50A100W**

- Photovoltaic charging + BMS integration: During operation, SOC calibration is accurate.
- Intelligent BMS: System parameters can be adjusted using RS485 port.
- Heating function: It will work in low temperature climates.
- Intelligent sleep function: ensures safety and energy saving during storage & transportation.
- High and low temperature charge and discharge protection: will work normally under harsh outdoor conditions.
- Just add a WiFi/4G/5G Camera.

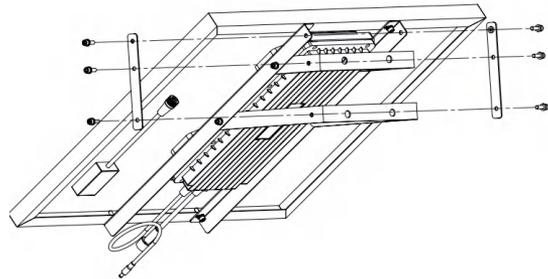


JUST ADD A WIFI/4G/5G CAMERA



**INCLUDES: SOLAR PANEL, BATTERY,
MOUNTING SCREWS, BRACKETS &
COMMUNICATION CABLES**

COMPONENT	PARAMETER	SP-20A60W	SP-40A80W	SP-50A100W
Solar Panel	Rated Power	60W	80W	100W
	Open Circuit Voltage	18.47V	19.2V	19.13V
	Short Circuit Current	3.95A	5.04A	6.34A
	Operating Voltage	15.99V	16.65V	16.55V
	Working Current	3.75A	4.81A	6.04A
	Module Efficiency	19.35%		
	Power Tolerance	0, +4.99W		
	Maximum System Voltage	700Vdc (IEC / UL)		
Battery	Battery Type	Ternary lithium battery		
	Cell Model	18650	18650	18650
	Cell Capacity	2000mAh	2000mAh	2000mAh
	Cell Combination	3510P	3520P	3520P
	Rated Voltage	11.1V		
	Nominal Capacity	20AH	40AH	50AH
	Operating Temperature Range	-30°C-70°C		
	Maximum Charging current	10A		
Structure	Maximum Discharge current	<10A		
	Dimensions	530*630*55mm		
	Weight	6kg	9.5kg	14kg
Standard Average Power For Camera	MaxCamera Power (W)	6W	8W	10W
	Battery Life On Rainy or Cloudy Days	3 Days +		



50W Mono Solar Panel with built in Weatherproof Battery Charger



Intelligent MPPT Charge Controller

Optimizes the performance of the solar panel
Generates at least **10%-20%** more power than PWM and protects battery from:
Discharge, Reversed polarity, Over-charge, Over-voltage



12V

Over-charge Over-voltage Discharge Reversed polarity

NEW!

GC-50W-P/W

- The parameters are tested under International Standard Test Condition(STC: Temperature: 25C, Irradiance: 1000 W/m2, Air mass 1.5 (AM1.5))
- The main factors affecting the performance of the solar charger are Temperature, Sunlight strength and Atmosphere in your real time conditions.
- Designed for 12V DO NOT USE IT ON 6V, 24V ,36V batteries.
- Capable Of Charging: 7-18Ah battery and capable of maintaining 20-100Ah battery, when the battery is being stored or not used regularly.

GC-5M EXT
5 Meter Extension Cable
(Maximum Of 2 Per Unit) can be used.



Technical Parameters:

Technical Parameters	
Rated Power Output	50W
Power Tolerance	± 5%
Operating Power Voltage	18V
Operating Power Current	2.78A
Open Circuit Voltage(Voc)	21.6V
Short Circuit Current(Isc)	2.96A
Trickle Charging Current	0.2A
Floating Charging Voltage	13.8V
Overcharge Protection Voltage	14.4V
Current Temperature Coefficient	0.1 %/° C
Voltage Temperature Coefficient	-0.37 %/° C
Power Temperature Coefficient	-0.45 %/° C
Operating Temperature	-40°C - 85°C
Max.Snow/Wind load	2400 Pa
Cable Diameter/Length	20AWG/3m
Waterproof Grade	IP65
Solar Panel Measurements	590.44 x 520.07 x 20.54mm

Suitable For:
Gate Motors, Fence Energisers, 4x4's, Camping, Caravans, Boats/Jetski's & Tractors.



Adjustable angle
0-15-30-45-60 degree



Designed for pole dia
2.35inch-4.0inch/60mm-100mm




ALSO WALL MOUNTABLE

Specifications

Cell Model	Lithium iron phosphate battery cell 3.2V/8Ah
Nominal Capacity	8Ah(Standard 0.5C charge and 0.5C discharge)
Minimum Capacity	6Ah
Watt Hour	102.4WH
Nominal Voltage	12.8V
Initial AC Impedance	≤ 120mΩ (at 1kHz after standard charge)
Charging Voltage	14.4V
Discharging Voltage	12.5V
Standard charging method	3A (0.5C)
Recommended charging current	1.5A(0.25C)
Maximum continuous discharge current	6A
Maximum instantaneous discharge current	10A
Cycle Life	2000DOD%80

NEW!

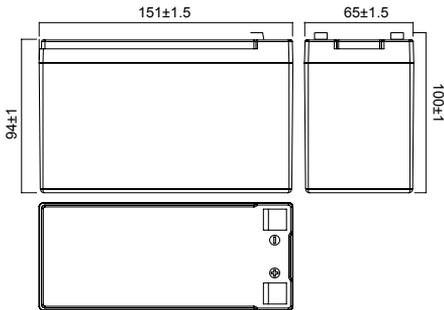
ONESTO®

LP4-12V-8AH EBP-12V-8AH

Lithium-Iron Battery Specifications

Features

- Maintenance free
- Safety and no leakage
- Excellent recharge and discharge performance
- Low self-discharge rate
- Adapt to high or low temperature
- Good deep discharge performance
- Longer cycle life



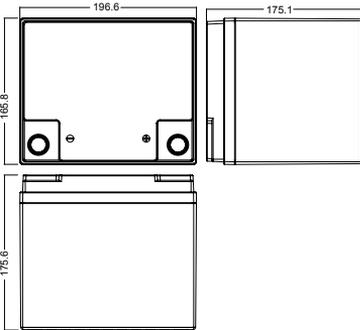
Dimension	151*65*94mm
Weight (Kg)	1.2KG
Operating Temperature	Charging: 0°C ~ 55°C Discharging: -20°C ~ 60°C
Storage Temperature	1 month: -20°C ~ 60°C 3 months: -20°C ~ 45°C 1 year: -20°C ~ 25°C
Relative Humidity	65±20%
Delivery Voltage	≥12.8V
Water proof grade	IP35
Charge retention and capacity recovery capability	Standard charge the battery, and then put aside at room temperature for 28d or 55°C for 7d. Charge retention rate ≥90%, Recovery rate of charge ≥90%

NB: This Battery Can Not Be Used In Series or Parallel.



Specifications

Cell Model	Lithium iron phosphate battery cell 32700 3.2V/6Ah
Nominal Capacity	36Ah(Standard 0.5C charge and 0.5C discharge)
Minimum Capacity	33Ah
Watt Hour	460.8WH
Nominal Voltage	12.8V
Initial AC Impedance	≅ 100mΩ (at 1kHz after standard charge)
Charging Voltage	14.6V
Discharging Voltage	9.6V
Standard charging method	18A (0.5C)
Recommended charging current	9A(0.25C)
Maximum continuous discharge current	30A
Maximum instantaneous discharge current	30A
Cycle Life	2000DOD%80



Dimension	197*165*169mm
Weight (Kg)	5KG
Operating Temperature	Charging: 0°C ~ 55°C Discharging: -20°C ~ 60°C
Storage Temperature	1 month : -20°C ~ 60°C 3months : -20°C ~ 45°C 1 year : -20°C ~ 25°C
Relative Humidity	65±20%
Delivery Voltage	≥12.8V
Water proof grade	IP35
Charge retention and capacity recovery capability	Standard charge the battery, and then put aside at room temperature for 28d or 55°C for 7d. Charge retention rate ≥90%. Recovery rate of charge ≥90%

NEW!

OMESTO®

LP4-12V-36AH

Lithium-Iron Battery Specifications

Features

- Maintenance free
- Safety and no leakage
- Excellent recharge and discharge performance
- Low self-discharge rate
- Adapt to high or low temperature
- Good deep discharge performance
- Longer cycle life



Please use a suitable LiFePO4 battery charger to ensure the battery is charged correctly or use the MCESC-1210/1220 Solar Charge Controller which has a LiFePO4 charge setting and with a suitably sized Panel.

Applications: If used in conjunction with Charge Controller and Panel will be suitable for Residential Gate Motors and Security Systems that require a longer runtime than Lead-Acid Batteries can afford.

12V 100AH LITHIUM BATTERY WITH LCD SOC INDICATOR



LP4-12V-100AH | EBPD-12V-100AH

- High Cycle Life: >2000 Times @ 80% DOD For Effectively Lower Cost Of Ownership.
- Built-in BMS Protection: Battery Management System Are Incorporated To Protect Battery From Over Charging, Over Discharging & Short Circuit.
- Light Weight: Dry Power Lithium Batteries Has Higher Energy Density, wh/kg Also Being Up To 1/3 Lighter Than A SLA Battery.
- Wide Operating Temperature Range: Suitable For Users In A Wider Range Of Application Where Ambient Temperature Is Unusually High: Up to +60°C.
- Steady Output Voltage, Vibration & Shock Resistant, No Memory Effect, Pressure Resistant Cells

TECHNICAL DATA

Cell Type	Prismatic 3.2v 50ah
Nominal Voltage	12.8V
Nominal Capacity	100AH
Capacity @20A	5HR
Energy	1280WH
Resistance	≤20mΩ
Efficiency	99%
Self Discharge	< 3% per month
Discharge Temperature	-20 to 60° C
Charge Temperature	0 to 55 °C
Storage Temperature	-20 to 40° C
BMS High Temperature	80 °C
Reconnect Temperature	50 °C
Max. Cont. Discharge	100A
Peak Discharge Current	200A
Discharge Cut-off voltage	12.5V
Recommended Charge Current	20A-30A
Max. Charge Current	100A
Max Charge Voltage	14.6V
Charge Current (-20 to -10	≤0.05 C

NB: This Battery Can Not Be Connected In Paralle!!!

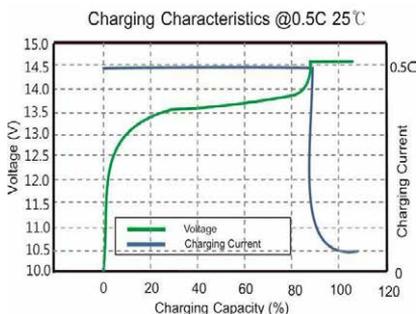
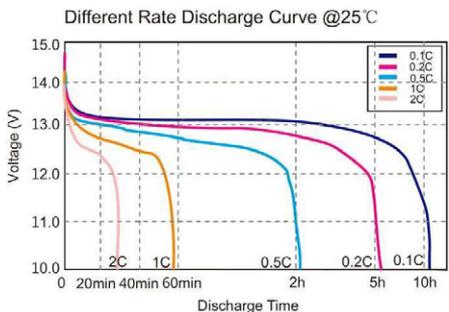
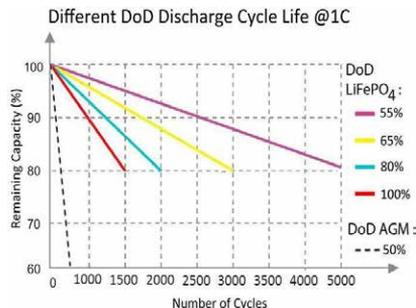
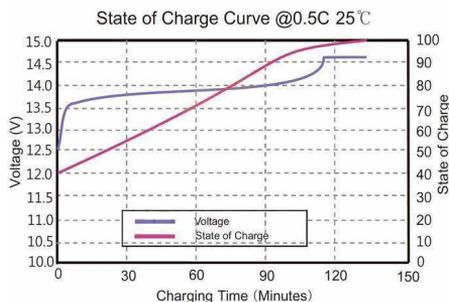
It Can ONLY Be Connected In Series Up To A Max Of 4 Batteries To Make Up 48VDC.

It Can Either Be Used In A 24VDC System or A 48VDC System.

LP4-12V-100AH | EBPD-12V-100AH

LITHIUM-ION BATTERY SPECIFICATIONS

PERFORMANCE CHARACTERISTIC



SUITABLE APPLICATIONS

Lithium Iron Phosphate can be used in any application that would normally use Lead Acid, GEL, or AGM type batteries. LiFePO4 in 4S=12.8V and 8S=25.6V is closed to Lead Acid equivalents of the Lithium rechargeable types. Suitable applications included caravan, marine, golf carts, solar storage, remote monitoring, switching applications.

CAUTIONS

- Do NOT expose the battery to water
- Do NOT expose the battery to fire & high temperature
- Do NOT short circuit, crush or disassemble
- Only use LiFePO4 charger
- Store at 50% capacity, recharge every 3 months. The storage area should be clean, cool, dry and ventilated.

51.2V 5.1KW LITHIUM BATTERY



EB5000

- Assemble either in series or parallel Up to 8 Series/8 Parallel (409.6V, 326.4kWh)
- High energy efficiency (charge and discharge) > 97%
- High Rate Charge & Discharge, Max charge current 60A, Max discharge current 80A
- Dual Safety hardware
- Safe and Reliable BMS Relay design
- Long Life Reliable LFP cells, Cycle life >6000 cycles
- Premium quality protection devices with UL+IEC approvals
- Smart Monitoring via WIFI App
- Quiet operation

TECHNICAL DATA

Model	EB5000
Total Energy*	5.1kWh
Usable Energy(DC)*	4.8kWh
Nominal Dis-/Charge Power	3.0kW
Peak Power(Only Discharge)	6kW for 3s
Constant Current(Only Discharge)	80A
Voltage	48~56Vd.c
Nominal Voltage	51.2Vd.c
Nominal Current	60A
Max. Charge Voltage	57.6Vd.c
Weight	45kg
Dimension(mm)	500*448*135mm
Max.recommended DOD	90%
Operating Condition	Indoor
Operating Temperature	Charge: From 0~50°C Discharge: From -10~55°C
WIFI Frequency Range	2400MHz~2483MHz
Humidity	< 60%(No condensed water)
Over Voltage Category	II
Cooling Type	Natural cooling
Case Material	Metal
Color	Black or White
Installation	WII mounting/Ground Installation
IP rating	IP 20
Protective Class	I
Max. Connection Number	8 Series/8 Parallel
Warranty	10 years ***
Life Span	>15 years ***
Communication	CAN/ RS485
Protection Mode	Dual hardware protection
Battery Protection	Over-current / Over-voltage / Short circuit / Under-voltage / Over temperature
Safety	Cell UL 1973 CE / IEC62619
Hazardous Material Classification	9
Transportation	UN 38.3

Testing conditions based on temperature 25°C at the beginning of life.

*Please be advised that heavy & continuous loadshedding will impact negatively on the batteries lifespan over time.

** See Limited Warranty Document.

51.2V 5.1KW LIFePO4 BATTERY



EBM-5K

- Safety LFP battery - CATL Cells
- Compact design of battery pack (3U in Height)
- Advanced BMS control
- Multi-parallel configuration among battery clusters
- Completed communication Interface to Inverter & EMS
- Black Start & Emergency back-up
- WiFi Capable

What is black start solar functionality?

In simple terms, black start functionality refers to the ability of a battery system to restart and power up the home in the event of an extended blackout. In the case of a blackout your battery will immediately switch over giving you emergency electricity, but what happens when your battery is exhausted?

A solar battery system without blackstart will not be able to use or charge from the solar power generated when the sun rises in the morning, in fact, it won't be able to restart until the grid is reconnected. In this situation, your solar panel system will not even be able to supply backup electricity at all until the electrical grid is live again. Blackstart is the ability of a solar system to restart as soon as the solar panels start generating power even if the grid is still down.

TECHNICAL DATA

Type	EBM-5K
Cell Type	LiFePO4 (LFP)
Rated Voltage (V)	51.2V
Rated Capacity (Ah)	100ah
Rated Energy (kWh)	5.12kwh
Usable Battery Capacity (Ah)	100ah
Usable Battery Energy(kWh)	5.12kwh
Battery Depth of Discharge	100%
Battery Max Charge/Discharge Power(kw)	2.56/5.12
Connection	16S
Working Voltage Range (V)	44.8~57.6
Standard Charge Current (A)	50A
Max. Continuous Charge Current (A)	50A
Standard Discharge Current (A)	50A
Max Continuous Discharge Current(A)	100 A
	Only boost version Supports(>60% SOC).(For details, please consult our engineers)
	Normal version only supports 0.5C (50A)
Peak Current	100A
Rated DC Power(kw)	2.56kw
Standard Charging Method	0.5C CC to 57.6V; CV at 57.6V till current is 0.05C
Working Temp. (°C)	Charging: 0°C to 50°C; Discharging: -20°C to 55°C
Working ROH	20% ~ 80%
Storage Temp. (°C)	-20°C ~ 50°C
Self-discharging rate	≤5% (25 °C, 50% SoC) Per Month
SOC Transportation Range	50%
Insulation Resistance (MΩ)	>100
Voltage Difference in each module (mV)	≤20
Inner Resistance of single Cell (mΩ)	0.34±0.05 (fresh cell 30~40% SoC)
IP Rating	IP20
Recommended Indoor/Outdoor Usage	Indoor
Net Weight (kg)	Approx. 45
Dimension (mm)	440*530*132 (not include connector, MSD and other parts)
Max Cycles	6000 ***
Designed Calendar Life	10 Years ***

Note:

1. Battery ΔV should be less than 3V at first Parallel installation, or BMS has a potential failure risk.

if $\Delta V > 3V$, please Discharge the batteries to meet $\Delta V \leq 3V$, or consult our engineers.

* Please be advised that heavy & continuous loadshedding will impact negatively on the batteries lifespan over time.

** See Limited Warranty Document.

51.2V 5.1KW & 10.2KW LIFePO4 BATTERIES



EBD-5K | EBD-10K

- Safety (tier-1 LFP battery CATL Cells)
- Rigorously tested (IC & UL certified)
- Designed with flexibility and configurability (up to 32 units in parallel, supporting 160 kWh one time)
- Self-heating at low temperatures
- Easy installation
- Outdoor installations (IP65)
- Continuous upgrades (OTA)
- WiFi Capable

TECHNICAL DATA

Model	EBD-5K	EBD-10K
Rated Capacity	100Ah	200Ah
Rated Voltage	51.2 V	51.2 V
Rated Current	0.6C, 60 A	0.55C, 110 A
Working Voltage Range	44.8-58.4 V	44.8-58.4 V
Rated Energy	5.1kWh	10.2kWh
Max. Parallel Quantity	Max. 32 sets in parallel ,200KWh	Max. 16 sets in parallel ,400KWh
Standard Charging Current	0.6C (60A)	0.55C, 110 A
Maximum Charging Continuous Current	0.6C (60A)	0.55C, 110 A
Standard Discharge Current	0.6C (60A)	0.55C, 110 A
Max Discharge Continuous Current	1C (100A) >60% SOC	0.55C, 110 A
Battery Max Charge/Discharge Power	3KW/5KW	5.5KW/5.5KW
Max Discharge peak Current/Power	105A/5.3KW, 1min	120A/6.1KW, 1min
Available SOC Range	0% ~ 100% 90% (DOD is recommended)	
SOC Transportation Range	50%	
Dimensions [W*D*H]	460x158x640mm(±5)	550x165x869mm(±5)
Weight	50Kg	94Kg
Operating Temperature1	Charging Temperature : -5°C~55°C ; Discharge Temperature : -15°C ~ 55°C	
Storage Temperature2	-10°C ~ 50 °C	
Working Humidity	5~95%RH (non-condensing)	
Altitude	≤2000m	
Communication	CAN / Rs485 / Dry Contact / WiFi(option)	
Certificate	TUV/IEC 62619/IEC62040/IEC61000/UN38.3	
Designed Cycle Life	6000 (0.6C charging/discharging rate, 25°C, 80% DOD, 80% EOL, 1 cycle per day) **,**	
Designed Calendar Life	10 Years***	
IP Grade	IP65	
Cooling	Natural cooling	
Heating Power	Max. 247W	
Environment protection standard	RoHS , REACH	

Recommended operating & storage temperature: 10 ~ 30 °C.

*Please be advised that heavy & continuous loadshedding will impact negatively on the batteries lifespan over time.

**See Limited Warranty Document.

50AH 10.2KW, 15.3KW, 20.4KW, 25.6KW & 30.7KW LITHIUM BATTERIES



EBH-10K | EBH-15K EBH-20K | EBH-25K | EBH-30K

- Safety (tier-1 LFP batteries inside)
- Rigorously tested (IC & UL certificated)
- Quick stackable plug-in design
- Designed with flexibility and configurability 10 to 30 kWh/ single cluster, 30 to 300kWh/multiple clusters
- Wide range of inverter compatibility (from 80-750 V)
- Black start
- Self-heating at low temperature
- Easy installation (automatically clusters configuration)
- Continuous upgrades (OTA)
- HV Box Supplied (master & slave)
- WiFi Capable

TECHNICAL DATA

Model	EBH-10K	EBH-15K	EBH-20K	EBH-25K	EBH-30K
Battery Module Quantity	2	3	4	5	6
Total capacity	50Ah	50Ah	50Ah	50Ah	50Ah
Nominal voltage	204.8Vdc	307.2Vdc	409.6Vdc	512Vdc	614.4Vdc
Size (W*D*H) mm	560*400*735	560*400*967	560*400*1199	560*400*1431	560*400*1663
Total energy	10.2kwh	15.3kwh	20.4kwh	25.6kwh	30.7kwh
Weight	148.1kg	207.6kg	266.8kg	326kg	385.2kg
Rated Charge / Discharge current	30A(0.6C)				
Designed Calendar Life	10years(0.6 C @ 25 deg C, 80% DoD, 1 cycle per day) ***				
Design Cycle Life	6000 (0.6C@25°C, 80% DOD, 80% SOH) ***				
Operating Temperature	Charging Temperature : -5°C~55°C ; Discharge Temperature : -15°C ~ 55°C				
Storage Temperature	-10°C~50°C				
RTE	≥95%				
Operating ambient humidity	5%~95%RH (non-condensing)				
Discharge rate of Module	≤2%/month/@25°C				
Module Series connection	1S-6S				
Parallel connection	10 units in parallel				
Cooling	Natural cooling				
Altitude	≤2000m				
Ingress Protection	IP55				
Communication port	RS485/CAN				
Regulation compliance	VDE 2510/IEC62619/UL1973/UL9540/UL9540A				
EMC standard/EMC	EN61000-6-1&EN61000-6-3				
UN Transportation Test Standard	UN38.3				
Ingress Protection rate	IP55 (in stacked up state)				
Environment protection standard	ROHS , REACH				

*Please be advised that heavy & continuous loadshedding will impact negatively on the batteries lifespan over time.

**See Limited Warranty Document.

EB5000 LITHIUM BATTERY MOUNTING BRACKETS

NEW!

WALL MOUNTING BRACKETS

EB-WMB

2 Battery Wall Mounting Brackets



NEW!

FLOOR MOUNTING BRACKETS

EB-FMB

Floor Mounting Brackets Per Set



EB5000 LITHIUM BATTERY CONNECTORS

NEW!

BATTERY CONNECTOR

EB-CON-B

EB5000 **Black** 200A Battery Connector -
Head Only



NEW!

BATTERY CONNECTOR

EB-CON-O

EB5000 **Orange** 200A Battery Connector -
Head Only



FIRE EXTINGUISHER

NEW!

FIREBALL EXTINGUISHER

F360



- 3-7 Seconds Automatic Activation When In Contact With A Naked Flame
 - Covers a area from 9 up to 12sqm
 - Multi-Purpose Fire Protection - Class A, B and C
- Protect your investment and your home.
Not Suitable To Extinguish Lithium Batteries.**

NB: SolarPal Fireballs are NOT recommended for use with Class D Combustible metal fires eg Lithium battery fires.

BATTERY TESTER



BT-301C

NEW!

Applications:

Test single Lead-Acid or Nickel-Cadmium cell or battery string (one by one after setting once).
Cell types supported: 1.2V, 2V, 6V, 12V and other customized types up to 6000Ah.

Voltage:

0.000V-25V DC

Resistance:

0.001 mΩ-100mΩ

Conductance:

100 - 19 990 Siemens

Test Data Storage:

100,000 cells stored internally, unlimited with USB drive exportation

Accuracy:

Resistance/Conductance: 2%
Voltage: 0.5%

Voltmeter Resolution:

1mV

User Programmable Functions:

- Customized battery types
- Low voltage alarm setting
- High resistance alarm setting
- Test mode (push button/touch screen/auto start)

Cable Options:

- 2-section Pin probe
- Alligator Test Clamp
- Custom cables by quotation

Power supply:

- Li-ion battery (4000mAh), 8~12hours working time full charge

Display:

272*480 pixel, 4.3'TFT Touch Screen LCD

Data Transfer:

USB via micro USB cable

Operation Environment:

0~40°C. 90% relative humidity, non-condensing

Storage Temperature:

-20~50°C

Over Voltage Protection:

- Auto-reset disconnect
- Reverse polarity protected

Housing Material:

Acid resistant ABS plastic santoprene overmold

Tester Dimensions:

L186*W98*H40 mm

PV PANEL TESTER

MI 3108

MI 3108 EurotestPV is a combined photovoltaic tester and electrical installations safety tester. It enables complete testing of electrical installations according to EN 61557 standards and in addition performs all necessary tests required on single-phase photovoltaic (PV) installations. This includes all of the tests as required by EN 62446, but also includes I – U characteristic, Calculation of STC values as required by EN 61829 and power measurements on Inverter's DC and AC sides. The unit is designed for the demanding working conditions (up to 1000 V, with 15 A DC). To greatly improve user safety the MI 3108 EurotestPV comes with the PV Safety Probe which ensures safe disconnection every time.

Photovoltaic installations:

- Measurements on DC side of PV installation:
- Voltage, current, power;
- Uoc (Open Circuit Voltage) and Isc (Short Circuit Current);
- I – U curve of PV modules and strings;
- Irradiance;
- Module temperature.
- Measurements on AC side of PV installation:
- Voltage, current, power;
- Efficiency of PV module, inverter, PV system calculation.

Electrical installations:

- Insulation resistance;
- Continuity of PE conductors;
- Line impedance;
- Loop impedance (sub-functions with high current and without RCD tripping);
- RCD testing (type AC, A and B);
- Earth resistance;
- AC current (load and leakage);
- TRMS voltage, frequency, phase sequence;
- Power, energy, harmonics.

Electrical installations:

- RCD Auto: Automated RCD testing procedure significantly reduces test time.
- Trip Lock function: Loop impedance test are performed without tripping the RCD.
- B type RCD testing: is supported.
- Earth resistance measurement: instrument supports 3-wire earth resistance testing.
- Built-in fuse tables: for automatic evaluation of the line / loop impedance results.
- Online voltage monitoring: monitors all 3 voltages in real time.
- Scope function: real-time U/I scope.
- Harmonics analysis: 1-phase power and energy measurements with up to 11th harmonics analysis is supported.
- Memory: Up to 1800 test results or up to 500 graphical results with timestamp can be stored in internal memory.
- BT connectivity: it enables BT communication with Android tablets and smart phones via optional BT dongle.
- Android application: enables advanced data management APP EuroLink PV and EuroLink Android.
- PC SW EuroLink PRO enables downloading, uploading, review, analyses and printing of test results.

NEW!

AC INPUT & OUTPUT DISTRIBUTION BOARD

**TO BE USED IN CONJUNCTION WITH:
3KW 1PHASE INVERTER**



PB-3

AC INPUT & OUTPUT PROTECTION BOX DATA SHEET	
Product Code	PB-3
MUNICIPAL FEED TO CHANGE OVER	
Max Operating AC Voltage	250 Vac
Max Current Mains Input Circuit Breaker to Change Over	40 A – 2 Pole
No of Poles for Changeover	2 Pole
Changeover Rated Voltage	400 Vac
Changeover Rated Current	40 A
Changeover Rated Impulse Withstand Voltage	4 KV
Front Operation with Three Stable Positions	I – O – II
Mains Indication light	Green - 240 Vac
INVERTER INPUT FEED FROM MUNICIPAL GRID	
Max Operating AC Voltage	230 Vac
Max Current Inverter Input Circuit Breaker	40 A – 2 Pole
Inverter input AC Surge Protection	Type 2
Nominal Discharge Current	5 KA
Maximum Discharge Current	10 KA
Voltage Protection Level	0.8 KV
Maximum Continuous Operating Voltage U _c	275 V
Min Required Inverter Input Cable Size	10mm ²
INVERTER OUTPUT FEED	
Max Operating AC Voltage	230 Vac
Max Current Inverter Output Main Circuit Breaker	16 A – 2 Pole
Min Required Inverter Output Cable Size	2.5mm ²
Inverter Indication Light	Red – 240 Vac
DISTRIBUTION BOARD	
Enclosure	PVC with Smokey Swing Door
IP Rating	IP 65
Double Insulated	YES
Dimension (L X W X D)	280(L) X 300(W) X 140(D)
Earth Bar	12 WAY
Neutral Bar	12 WAY
Installation Method	Wall Mounting
Operating Temperature	-20° C to 80° C

AC INPUT & OUTPUT DISTRIBUTION BOARD

**TO BE USED IN CONJUNCTION WITH:
5KW 1PHASE INVERTER**



PB-5

AC INPUT & OUTPUT PROTECTION BOX DATA SHEET	
Product Code	PB-5
MUNICIPAL FEED TO CHANGE OVER	
Max Operating AC Voltage	250 Vac
Max Current Mains Input Circuit Breaker to Change Over	40 A – 2 Pole
No of Poles for Changeover	2 Pole
Changeover Rated Voltage	400 Vac
Changeover Rated Current	40 A
Changeover Rated Impulse Withstand Voltage	4 KV
Front Operation with Three Stable Positions	I – O – II
Mains Indication light	Green - 240 Vac
INVERTER INPUT FEED FROM MUNICIPAL GRID	
Max Operating AC Voltage	230 Vac
Max Current Inverter Input Circuit Breaker	40 A – 2 Pole
Inverter input AC Surge Protection	Type 2
Nominal Discharge Current	5 KA
Maximum Discharge Current	10 KA
Voltage Protection Level	0.8 KV
Maximum Continuous Operating Voltage U _c	275 V
Min Required Inverter Input Cable Size	10mm ²
INVERTER OUTPUT FEED	
Max Operating AC Voltage	230 Vac
Max Current Inverter Output Main Circuit Breaker	25 A – 2 Pole
Min Required Inverter Output Cable Size	4mm ²
Inverter Indication Light	Red – 240 Vac
DISTRIBUTION BOARD	
Enclosure	PVC with Smokey Swing Door
IP Rating	IP 65
Double Insulated	YES
Dimension (L X W X D)	280(L) X 300(W) X 140(D)
Earth Bar	12 WAY
Neutral Bar	12 WAY
Installation Method	Wall Mounting
Operating Temperature	-20° C to 80° C

NEW!

AC INPUT & OUTPUT DISTRIBUTION BOARD

TO BE USED IN CONJUNCTION WITH:
6KW 1PHASE INVERTER



PB-6

AC INPUT & OUTPUT PROTECTION BOX DATA SHEET	
Product Code	PB6
MUNICIPAL FEED TO CHANGE OVER	
Max Operating AC Voltage	250 Vac
Max Current Mains Input Circuit Breaker to Change Over	40 A – 2 Pole
No of Poles for Changeover	2 Pole
Changeover Rated Voltage	400 Vac
Changeover Rated Current	40 A
Changeover Rated Impulse Withstand Voltage	4 KV
Front Operation with Three Stable Positions	I – O – II
Mains Indication light	Green – 240 Vac
INVERTER INPUT FEED FROM MUNICIPAL GRID	
Max Operating AC Voltage	230 Vac
Max Current Inverter Input Circuit Breaker	40 A – 2 Pole
Inverter input AC Surge Protection	Type 2
Nominal Discharge Current	5 KA
Maximum Discharge Current	10 KA
Voltage Protection Level	0.8 KV
Maximum Continuous Operating Voltage U _c	275 V
Min Required Inverter Input Cable Size	10mm ²
INVERTER OUTPUT FEED	
Max Operating AC Voltage	230 Vac
Max Current Inverter Output Main Circuit Breaker	32 A – 2 Pole
Min Required Inverter Output Cable Size	6mm ²
Inverter Indication Light	Red – 240 Vac
DISTRIBUTION BOARD	
Enclosure	PVC with Smokey Swing Door
IP Rating	IP 65
Double Insulated	YES
Dimension (L X W X D)	285(L) X 300(W) X 140(D)
Earth Bar	12 WAY
Neutral Bar	12 WAY
Installation Method	Wall Mounting
Operating Temperature	-20° C to 80° C

AC INPUT & OUTPUT DISTRIBUTION BOARD

TO BE USED IN CONJUNCTION WITH:
**10KW 1PHASE INVERTER &
11KW 1PHASE INVERTER**



PB-10-1

AC INPUT & OUTPUT PROTECTION BOX DATA SHEET	
Product Code	PB-10-1
MUNICIPAL FEED TO CHANGE OVER	
Max Operating AC Voltage	250 Vac
Max Current Mains Input Circuit Breaker to Change Over	63 A – 2 Pole
No of Poles for Changeover	2 Pole
Changeover Rated Voltage	400 Vac
Changeover Rated Current	63 A
Changeover Rated Impulse Withstand Voltage	4 KV
Front Operation with Three Stable Positions	I – O – II
Mains Indication light	Green – 240 Vac
INVERTER INPUT FEED FROM MUNICIPAL GRID	
Max Operating AC Voltage	230 Vac
Max Current Inverter Input Circuit Breaker	63 A – 2 Pole
Inverter input AC Surge Protection	Type 2
Nominal Discharge Current	5 KA
Maximum Discharge Current	10 KA
Voltage Protection Level	0.8 KV
Maximum Continuous Operating Voltage U _c	275 V
Min Required Inverter Input Cable Size	10mm ²
INVERTER OUTPUT FEED	
Max Operating AC Voltage	230 Vac
Max Current Inverter Output Main Circuit Breaker	50 A – 2 Pole
Min Required Inverter Output Cable Size	10mm ²
Inverter Indication Light	Red – 240 Vac
DISTRIBUTION BOARD	
Enclosure	PVC with Smokey Swing Door
IP Rating	IP 65
Double Insulated	YES
Dimension (L X W X D)	285(L) X 410(W) X 140(D)
Earth Bar	18 WAY
Neutral Bar	18 WAY
Installation Method	Wall Mounting
Operating Temperature	-20° C to 80° C

NEW!

AC INPUT & OUTPUT DISTRIBUTION BOARD

TO BE USED IN CONJUNCTION WITH:
10KW 3PHASE INVERTER



PB-10-3

AC INPUT & OUTPUT PROTECTION BOX DATA SHEET	
Product Code	PB10-3
MUNICIPAL FEED TO CHANGE OVER	
Max Operating AC Voltage	415 Vac
Max Current Mains Input Circuit Breaker to Change Over	40 A – 3 Pole
No of Poles for Changeover	3 Pole
Changeover Rated Voltage	400 Vac
Changeover Rated Current	40 A
Changeover Rated Impulse Withstand Voltage	4 KV
Front Operation with Three Stable Positions	I – O – II
Mains Indication light	R, W, B - 415 Vac
INVERTER INPUT FEED FROM MUNICIPAL GRID	
Max Operating AC Voltage	415 Vac
Max Current Inverter Input Circuit Breaker	40 A – 2 Pole
Inverter input AC Surge Protection	Type 2
Nominal Discharge Current	20 KA
Maximum Discharge Current	40 KA
Voltage Protection Level	≤1.2 KV
Maximum Continuous Operating Voltage Uc	275 V
Min Required Inverter Input Cable Size	10mm ²
INVERTER OUTPUT FEED	
Max Operating AC Voltage	415 Vac
Max Current Inverter Output Main Circuit Breaker	25 A – 3 Pole
Min Required Inverter Output Cable Size	6mm ²
Inverter Indication Light	R, W, B – 415 Vac
DISTRIBUTION BOARD	
Enclosure	PVC with Smokey Swing Door
IP Rating	IP 65
Double Insulated	YES
Dimension (L X W X D)	285(L) X 410(W) X 140(D)
Earth Bar	18 WAY
Neutral Bar	18 WAY
Installation Method	Wall Mounting
Operating Temperature	-20°C to 80°C

AC INPUT & OUTPUT DISTRIBUTION BOARD

TO BE USED IN CONJUNCTION WITH:
12KW 3PHASE INVERTER



PB-12

AC INPUT & OUTPUT PROTECTION BOX DATA SHEET	
Product Code	PB12
MUNICIPAL FEED TO CHANGE OVER	
Max Operating AC Voltage	415 Vac
Max Current Mains Input Circuit Breaker to Change Over	40 A – 3 Pole
No of Poles for Changeover	3 Pole
Changeover Rated Voltage	400 Vac
Changeover Rated Current	40 A
Changeover Rated Impulse Withstand Voltage	4 KV
Front Operation with Three Stable Positions	I – O – II
Mains Indication light	R, W, B - 415 Vac
INVERTER INPUT FEED FROM MUNICIPAL GRID	
Max Operating AC Voltage	415 Vac
Max Current Inverter Input Circuit Breaker	40 A – 2 Pole
Inverter input AC Surge Protection	Type 2
Nominal Discharge Current	20 KA
Maximum Discharge Current	40 KA
Voltage Protection Level	≤1.2 KV
Maximum Continuous Operating Voltage Uc	275 V
Min Required Inverter Input Cable Size	10mm ²
INVERTER OUTPUT FEED	
Max Operating AC Voltage	415 Vac
Max Current Inverter Output Main Circuit Breaker	20 A – 3 Pole
Min Required Inverter Output Cable Size	10mm ²
Inverter Indication Light	R, W, B – 415 Vac
DISTRIBUTION BOARD	
Enclosure	PVC with Smokey Swing Door
IP Rating	IP 65
Double Insulated	YES
Dimension (L X W X D)	285(L) X 410(W) X 140(D)
Earth Bar	18 WAY
Neutral Bar	18 WAY
Installation Method	Wall Mounting
Operating Temperature	-20°C to 80°C

All Combiner Boxes have Breather Valves fitted to ensure good heat Dissipation in the unit.

NEW!

EARTH/NEUTRAL BRIDGE BOX

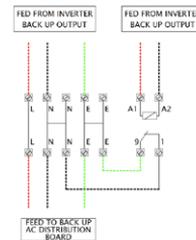


ENBB-25

EARTH AND NEUTRAL BRIDGE BOX TECHNICAL DATA SHEET

Product Code	ENBB-25
Max Operating Voltage	230 Vac
Max Inverter Output Current (Back Up)	25 A
Enclosure Door	Smokekey Grey
IP Rating	IP65
Double Insulated	YES
Dimensions	210(L) X 140(W) X 100(D)
LUV Protection	YES
Halogen Free	YES
Resistance to Impact	IK08
Glow Wire Resistance – Enclosure Only	650°C
Operating Temperature	-10°C TO +40°C
Relay Coil Voltage	230 Vac
Relay Contact Rating	10 A – AC
Contact Configuration	1 X N/O & 1 X N/C
Replaceable Relay	YES

WIRING DIAGRAM



COMBINER BOX WITH 1 IN & 1 OUT



CB1-1

COMBINER BOX 1 IN 1 OUT

PRODUCT CODE	CB1-1
ELECTRIC PARAMETER	
SYSTEM MAXIMUM DC VOLTAGE	1000 VDC
FUSE HOLDER	25 A 1000 VDC
MAXIMUM INPUT CURRENT FOR EACH STRING	15 A
MAXIMUM INPUT STRING	1
ISOLATOR	32 A 4 P 1000 VDC
MAXIMUM OUTPUT SWITCH CURRENT	32 A
NUMBER OF INVERTER MPPT	1
NUMBER OF OUTPUT STRINGS	1
STRING ENTRY	PV CONNECTORS
MAINS EXIT	PV CONNECTORS
LIGHTNING PROTECTION	
CATEGORY OF TEST	II GRADE PROTECTION
NOMINAL DISCHARGE CURRENT	20kA
MAXIMUM DISCHARGE CURRENT	40kA
VOLTAGE PROTECTION LEVEL	2.5kV
MAXIMUM CONTINUOUS OPERATING VOLTAGE U _c	1000VDC
POLES	2P
STRUCTURE CHARACTERISTIC	PLUG & PUSH MODULE
SYSTEM	
PROTECTION GRADE	IP65
OUTPUT SWITCH	DC ISOLATOR SWITCH
MC4 WATERPROOF CONNECTORS	6 MM
BOX MATERIAL	PVC
INSTALLATION METHOD	WALL MOUNTING
OPERATING TEMPERATURE	-20°C TO 80°C
WITH X HIGH X DEPTH	210 (L) X 215 (W) X 100 (D)

All Combiner Boxes have Breather Valves fitted to ensure good heat Dissipation in the unit.

NEW!

COMBINER BOX WITH 2 IN & 1 OUT



CB2-1

COMBINER BOX 2 IN 1 OUT	
PRODUCT CODE	CB2-1
ELECTRIC PARAMETER	
SYSTEM MAXIMUM DC VOLTAGE	1000 VDC
FUSE HOLDER	25 A 1000 VDC
MAXIMUM INPUT CURRENT FOR EACH STRING	15 A
MAXIMUM INPUT STRING	2
ISOLATOR	32 A 4 P 1000 VDC
MAXIMUM OUTPUT SWITCH CURRENT	32 A
NUMBER OF INVERTER MPPT	1
NUMBER OF OUTPUT STRINGS	1
STRING ENTRY	PV CONNECTORS
MAINS EXIT	PV CONNECTORS
LIGHTNING PROTECTION	
CATEGORY OF TEST	II GRADE PROTECTION
NOMINAL DISCHARGE CURRENT	20kA
MAXIMUM DISCHARGE CURRENT	40kA
VOLTAGE PROTECTION LEVEL	2.5kV
MAXIMUM CONTINUOUS OPERATING VOLTAGE U _c	1000VDC
POLES	2P
STRUCTURE CHARACTERISTIC	PLUG & PUSH MODULE
SYSTEM	
PROTECTION GRADE	IP65
OUTPUT SWITCH	DC ISOLATOR SWITCH
MC4 WATERPROOF CONNECTORS	6 MM
BOX MATERIAL	PVC
INSTALLATION METHOD	WALL MOUNTING
OPERATING TEMPERATURE	-20° C TO 80° C
WITH X HIGH X DEPTH	260 (L) X 300 (W) X 140 (D)

COMBINER BOX WITH 2 IN & 2 OUT



CB2-2

COMBINER BOX 2 IN 2 OUT	
PRODUCT CODE	CB2-2
ELECTRIC PARAMETER	
SYSTEM MAXIMUM DC VOLTAGE	1000 VDC
FUSE HOLDER	25 A 1000 VDC
MAXIMUM INPUT CURRENT FOR EACH STRING	15 A
MAXIMUM INPUT STRING	2
ISOLATOR	32 A 4 P 1000 VDC
MAXIMUM OUTPUT SWITCH CURRENT	32 A
NUMBER OF INVERTER MPPT	2
NUMBER OF OUTPUT STRINGS	2
STRING ENTRY	PV CONNECTORS
MAINS EXIT	PV CONNECTORS
LIGHTNING PROTECTION	
CATEGORY OF TEST	II GRADE PROTECTION
NOMINAL DISCHARGE CURRENT	20kA
MAXIMUM DISCHARGE CURRENT	40kA
VOLTAGE PROTECTION LEVEL	2.5kV
MAXIMUM CONTINUOUS OPERATING VOLTAGE U _c	1000VDC
POLES	2P
STRUCTURE CHARACTERISTIC	PLUG & PUSH MODULE
SYSTEM	
PROTECTION GRADE	IP65
OUTPUT SWITCH	DC ISOLATOR SWITCH
MC4 WATERPROOF CONNECTORS	6 MM
BOX MATERIAL	PVC
INSTALLATION METHOD	WALL MOUNTING
OPERATING TEMPERATURE	-20° C TO 80° C
WITH X HIGH X DEPTH	285 (L) X 410 (W) X 140 (D)

All Combiner Boxes have Breather Valves fitted to ensure good heat Dissipation in the unit.

NEW!

COMBINER BOX WITH 4 IN & 1 OUT



CB4-1

COMBINER BOX 4 IN 1 OUT	
PRODUCT CODE	CB4-1
ELECTRIC PARAMETER	
SYSTEM MAXIMUM DC VOLTAGE	500 VDC
FUSE HOLDER	25 A 1000 VDC
MAXIMUM INPUT CURRENT FOR EACH STRING	15 A
MAXIMUM INPUT STRING	4
CIRCUIT BREAKER	63 A 2 P 500 VDC
MAXIMUM OUTPUT SWITCH CURRENT	63 A
NUMBER OF INVERTER MPPT	1
NUMBER OF OUTPUT STRINGS	1
STRING ENTRY	PV CONNECTORS
MAINS EXIT	PV CONNECTORS
LIGHTNING PROTECTION	
CATEGORY OF TEST	II GRADE PROTECTION
NOMINAL DISCHARGE CURRENT	20kA
MAXIMUM DISCHARGE CURRENT	40kA
VOLTAGE PROTECTION LEVEL	2.5kV
MAXIMUM CONTINUOUS OPERATING VOLTAGE U _c	600VDC
POLES	2P
STRUCTURE CHARACTERISTIC	PLUG & PUSH MODULE
SYSTEM	
PROTECTION GRADE	IP65
OUTPUT SWITCH	DC CIRCUIT BREAKER
MC4 WATERPROOF CONNECTORS	6 MM
BOX MATERIAL	PVC
INSTALLATION METHOD	WALL MOUNTING
OPERATING TEMPERATURE	-20° C TO 80° C
WITH X HIGH X DEPTH	285 (L) X 410 (W) X 140 (D)

COMBINER BOX WITH 4 IN & 2 OUT



CB4-2

COMBINER BOX 4 IN 2 OUT	
PRODUCT CODE	CB4-2
ELECTRIC PARAMETER	
SYSTEM MAXIMUM DC VOLTAGE	1000 VDC
FUSE HOLDER	25 A 1000 VDC
MAXIMUM INPUT CURRENT FOR EACH STRING	15 A
MAXIMUM INPUT STRING	4
ISOLATOR	32 A 4 P 1000 VDC
MAXIMUM OUTPUT SWITCH CURRENT	32 A
NUMBER OF INVERTER MPPT	2
NUMBER OF OUTPUT STRINGS	2
STRING ENTRY	PV CONNECTORS
MAINS EXIT	PV CONNECTORS
LIGHTNING PROTECTION	
CATEGORY OF TEST	II GRADE PROTECTION
NOMINAL DISCHARGE CURRENT	20kA
MAXIMUM DISCHARGE CURRENT	40kA
VOLTAGE PROTECTION LEVEL	2.5kV
MAXIMUM CONTINUOUS OPERATING VOLTAGE U _c	1000VDC
POLES	2P
STRUCTURE CHARACTERISTIC	PLUG & PUSH MODULE
SYSTEM	
PROTECTION GRADE	IP65
OUTPUT SWITCH	DC ISOLATOR SWITCH
MC4 WATERPROOF CONNECTORS	6 MM
BOX MATERIAL	PVC
INSTALLATION METHOD	WALL MOUNTING
OPERATING TEMPERATURE	-20° C TO 80° C
WITH X HIGH X DEPTH	300 (L) X 415 (W) X 140 (D)

PVCAB-4B
PVC Black, 1x4mm²,
100 Meters Cable

PVCAB-4R
PVC Red, 1x4mm²,
100 Meters Cable

PVCAB-6B
PVC Black, 1x6mm²,
100 Meters Cable

PVCAB-6R
PVC Red, 1x6mm²,
100 Meters Cable

**SOLD IN 100M
ROLLS ONLY**

**PANEL
MOUNT**

ON4C-1500PM-4
IP68 Male Connector 1500VDC
Max 40A, 4mm², 16kV Impulse
Withstand Voltage, V-0/5VA
4mm² Snap-In Rivet for
Connector, Flame Class &
Safety Class 2.

ON4C-1500PM-6
IP68 Male Connector 1000VDC
Max 40A, 6mm², 16kV Impulse
Withstand Voltage, V-0/5VA
4mm² Snap-In Rivet for
Connector, Flame Class &
Safety Class 2.

**PANEL
MOUNT**

ON4C-1500PF-4
IP68 Female Connector 1500VDC
Max 40A, 4mm², 16kV Impulse
Withstand Voltage, V-0/5VA
4mm² Snap-In Rivet for
Connector, Flame Class &
Safety Class 2.

ON4C-1500PF-6
IP68 Female Connector 1000VDC
Max 40A, 6mm², 16kV Impulse
Withstand Voltage, V-0/5VA
4mm² Snap-In Rivet for
Connector, Flame Class &
Safety Class 2.

IN-LINE

OC4C-1500-4
IP67 Connector 1500VDC Max
40A, 4mm², 16kV Impulse
Withstand Voltage, V-0/5VA
Flame Class & Safety Class 2

OC4C-1500-6
IP67 Connector 1500VDC Max
40A, 6mm², 16kV Impulse
Withstand Voltage, V-0/5VA
Flame Class & Safety Class 2

PV-ONBC2-FM
IP67 2 Branch Cable: 1 Female
2 Male, Main Cable: 60cm,
Branch Cable: 10cm, Pin: 4mm,
1500VDC 30A, Safety Class 2

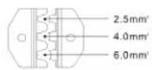
PV-ONBC2-MF
IP67 2 Branch Cable: 1 Male
2 Female, Main Cable: 60cm,
Branch Cable: 10cm, Pin: 4mm,
1500VDC 30A, Safety Class 2

**FUSED
IN-LINE**

ONCTF-4C
IP68 Fused Connector 1000VDC
Max 20A, 6mm², 8kV Impulse
Withstand Voltage, V-0/5VA
Flame Class & Safety Class 2

3002 WIRE STRIPPER
For wire size: 2,5mm-6mm

**P003 INSULATED SOLAR SYSTEM
CRIMPING PLIERS**
For wire size: 2,5mm;
4mm; 6mm



T001-002 SOLAR SPANNER
Single Solar Spanner For Series 4.0
Connectors

BV
Breather Valve For Combiner Boxes

PC-CAT6-R
2 Meter Red Cat6 Patch Cord Used For
BMS Comm Between The Inverter & Battery

NEW!

PV-35CAB-O
PVC Orange, 1x25mm²,
1000V Cable

PV-35CAB-B
PVC Black, 1x25mm²,
1000V Cable

Used for making Inverter Leads
& Links for OST 6000HB-120
& EB5000

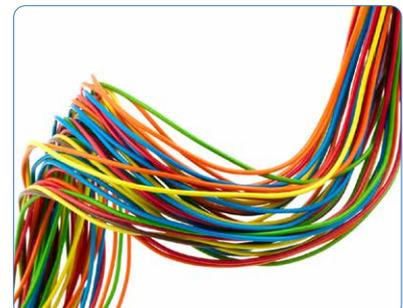
**SOLD IN 100M
ROLLS ONLY**

NEW!

**MCE
ELECTRIC**

PHOTOVOLTAIC SYSTEM LABELS

DB-PV LABEL BOOK
Photovoltaic System Labels





SOLAR PV FUSE HOLDER

PVH1-FH	50-160A	1 Pole 1000VDC
PVH2-FH	200-250A	1 Pole 1000VDC
PVH3-FH	315-630A	1 Pole 1000VDC

SOLAR PV FUSES



PVH1-50	50A PV Fuse	1000VDC
PVH1-63	63A PV Fuse	1000VDC
PVH1-80	80A PV Fuse	1000VDC
PVH1-100	100A PV Fuse	1000VDC
PVH1-125	125A PV Fuse	1000VDC
PVH1-160	160A PV Fuse	1000VDC
PVH2-200	200A PV Fuse	1000VDC
PVH2-250	250A PV Fuse	1000VDC
PVH3-315	315A PV Fuse	1000VDC
PVH3-400	400A PV Fuse	1000VDC
PVH3-500	500A PV Fuse	1000VDC
PVH3-630	630A PV Fuse	1000VDC



FUSE PULLER

PV1-FP Fuse Puller For The PVH1/2/3 Fuses Only

Solar PV System Protection PVH Series Fuse Link

Type	Rated Voltage(V)	Rated current(A)	Dimensions(mm)								Wiring diagram
			A	B	C	D	E	F	G		
PVH1	DC1000	50,63,80,100,125 & 160	135	75	46	6	46	61	20	Fig.1	
PVH2	DC1000	200 & 250	150	75	58	6	58	73	25	Fig.1	
PVH3	DC1000	315,400,500 & 630	150	75	69	6	69	83	32	Fig.1	

Solar PV System Protection PVH Series Fuse base

Type	Rated Voltage(V)	Class rating(A)	Dimensions(mm)										Wiring diagram
			A	B	C	D	E	F	G	H	K		
PVH1	DC1000	50-160	200	175	25	12	50	35	83	80	30	Fig.2	
PVH2	DC1000	200-250	225	200	25	12	50	35	85	80	30	Fig.2	
PVH3	DC1000	315-630	240	210	25	12	50	35	88	80	30	Fig.3	

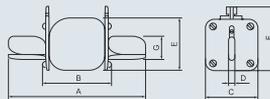


Fig. 1

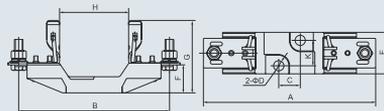


Fig. 2

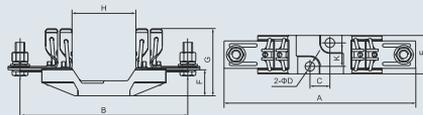


Fig. 3



10 x 38 DC FUSE HOLDER

KCF2-25-1	10 x 38	1 Pole 1000VDC
KCF2-25-2	10 x 38	2 Pole 1000VDC
KCF2-25-3	10 x 38	3 Pole 1000VDC
KCF2-25-4	10 x 38	4 Pole 1000VDC



10 x 38 DC CERAMIC FUSES

PVCF10-101	10 x 38	1A 1000VDC Fuse
PVCF10-102	10 x 38	2A 1000VDC Fuse
PVCF10-103	10 x 38	3A 1000VDC Fuse
PVCF10-104	10 x 38	4A 1000VDC Fuse
PVCF10-105	10 x 38	5A 1000VDC Fuse
PVCF10-106	10 x 38	6A 1000VDC Fuse
PVCF10-10	10 x 38	10A 1000VDC Fuse
PVCF10-12	10 x 38	12A 1000VDC Fuse
PVCF10-15	10 x 38	15A 1000VDC Fuse
PVCF10-20	10 x 38	20A 1000VDC Fuse
PVCF10-25	10 x 38	25A 1000VDC Fuse
PVCF10-32	10 x 38	32A 1000VDC Fuse



NEW!



SOLAR BATTERY FUSE SWITCH DISCONNECTOR

SPH9-160-DC 160A 1 Pole U_e AC 400V/DC 250V
AC-23B DC-21B

SPH9-160/3-DC 160A 3 Pole U_e AC 400V/DC 250V
AC-23B DC-21B

NEW!



SOLAR BATTERY FUSE SWITCH DISCONNECTOR

SPH1-250-DC 250A 2 Pole U_e AC 400V/DC 440V
400V 250A/AC-23B
440V 250A/DC-21B

SPH1-250/3-DC 250A 3 Pole U_e AC 400V/DC 440V
400V 250A/AC-23B
440V 250A/DC-21B

NEW!



SOLAR BATTERY FUSE

NH00-125-DC 125A DC Fuse (gG Type) 250VDC~100kA
500VAC~120kA

NEW!



SOLAR BATTERY FUSE

NH00-160-DC 160A DC Fuse (gG Type) 250VDC~100kA
500VAC~120kA

NEW!



SOLAR BATTERY FUSE

NH1-250-DC 250A DC Fuse (gG Type) 440VDC~100kA
500VAC~120kA

IMPORTANT:

The Fuse Holder Must Be Firmly Affixed To The Wall or Any Other Immovable Object With A Suitable Fastener (8x80 Fischer Plug x 2) Before The Fuse Is Inserted

NEW!

SOLAR COMPATIBLE

1 PHASE DIRECT READING ENERGY METER - DIN RAIL MOUNT 18MM WIDE



KM1DS40



scan for tutorial

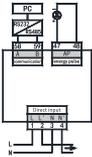
APPLICATIONS



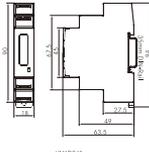
MAIN FEATURES



TYPICAL WIRING



DIMENSIONS (mm)



Model		KM1DS40
Wiring Method		Bottom Supply / Bottom Load
Accuracy		Class 1
Wiring		Single Phase 2 Wire
Voltage		230V
Current	Direct	5(40)A
Measuring	Voltage	■
	Current	■
	Power	■
	Power factor	■
	Frequency	■
Energy Metering	±kWh	■
	Tariffs	- / ■
Width(mm)		18
Communication (Modbus-RTU)		■
Energy Pulse		■
Display Mode		LCD
Normal Voltage		230V
Frequency		50/60Hz
Voltage Range		0.8Un~1.2Un
Start Current	Direct Input	0.004In
Consumption		Voltage circuit: 2VA, current circuit: 0.1VA
Energy Pulse		1 output, pulse width (8x200) ms
RTC Error		±0.5%/day
Communication		RS485, Modbus-RTU, 2-wire, up to 9600bps
IP Degree		Front case: IP51, rear case: IP20
Operating Temperature		-25°C~55°C
Storage Temperature		-25°C~70°C
Relative Humidity		(5~95)%, no condensation

IEC 62053-21
IEC 62053-11

NEW!

SOLAR COMPATIBLE

1 PHASE DIRECT READING ENERGY METER - DIN RAIL MOUNT 36MM WIDE



KM2DS63



scan for tutorial

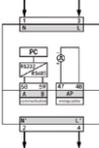
APPLICATIONS



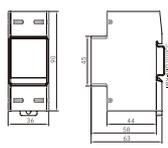
MAIN FEATURES



TYPICAL WIRING



DIMENSIONS (mm)



Model		KM2DS63
Wiring Method		Top Supply / Bottom Load
Accuracy		Class B
Wiring		Single Phase 2 Wire
Voltage		230V
Current	Direct	5(63)A
Measuring	Voltage	■
	Current	■
	Power	■
	Power factor	■
	Frequency	■
Energy Metering	±kWh	■
	Tariffs	- / ■
Width(mm)		36
Communication (Modbus-RTU)		■
Energy Pulse		■
Display Mode		LCD

NOTE: ■: Yes □: No □: Optional

IEC 61010-2-030
IEC 61010-1

NEW

3 PHASE DIRECT READING ENERGY METER - DIN RAIL MOUNT 72MM WIDE

**SOLAR
COMPATIBLE**



KM4DS63



scan for
tutorial

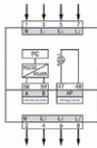
APPLICATIONS



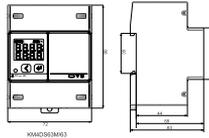
MAIN FEATURES

- Measuring**
 - Direct measurement up to 63A
- Energy Metering**
 - Bi-directional energy
 - Tariff energy
- Communication**
 - Interface: RS485
 - Protocol: ModbusRTU

TYPICAL WIRING



DIMENSIONS (mm)



Model		KM4DS63
Wiring Method		Top Supply / Bottom Load
Accuracy		Class B
Wiring		Three Phase 4 Wire
Voltage		3X230/400V
Current Direct		5(63)A
Measuring	Voltage	■
	Current	■
	Power	■
	Power factor	■
	Frequency	■
Energy Metering	skWh	■
	Tariffs	- / ■
Width(mm)		72
Communication (Modbus-RTU)		■
Energy Pulse		■
Display Mode		LCD

NOTE: 1: ■ Yes □ No □ Optional

IEC 61010-2-030
IEC 61010-1



- Standard: IEC60947-3, applicable to DC21B
- Maximum isolation voltage 1000VDC
- Rated impulse withstand voltage 8kV



DC DOUBLE POLE ISOLATORS - DIN RAIL MOUNT IP20

ODD16D2 16A 2P Din Rail Mount Isolator

ODD25D2 25A 2P Din Rail Mount Isolator

ODD32D2 32A 2P Din Rail Mount Isolator

DC FOUR POLE ISOLATORS - DIN RAIL MOUNT IP20

ODD16D4 16A 4P Din Rail Mount Isolator

ODD25D4 25A 4P Din Rail Mount Isolator

ODD32D4 32A 4P Din Rail Mount Isolator

ODD16D22 16A 4P Din Rail Mount Isolator

ODD25D22 25A 4P Din Rail Mount Isolator

ODD32D22 32A 4P Din Rail Mount Isolator



DC ISOLATORS - PANEL MOUNT IP20

ODD16P2 16A 2P Panel Mount Isolator

ODD25P2 25A 2P Panel Mount Isolator

ODD32P2 32A 2P Panel Mount Isolator

ODD16P4 16A 4P Panel Mount Isolator

ODD25P4 25A 4P Panel Mount Isolator

ODD32P4 32A 4P Panel Mount Isolator

ODD16P22 16A 4P Panel Mount Isolator

ODD25P22 25A 4P Panel Mount Isolator

ODD32P22 32A 4P Panel Mount Isolator



DC ISOLATORS - SURFACE MOUNT IP65

ODD16D-E2 16A 2P Surface Mount Isolator

ODD25D-E2 25A 2P Surface Mount Isolator

ODD32D-E2 32A 2P Surface Mount Isolator

ODD16D-E4 16A 4P Surface Mount Isolator

ODD25D-E4 25A 4P Surface Mount Isolator

ODD32D-E4 32A 4P Surface Mount Isolator

ODD16D-E22 16A 4P Surface Mount Isolator

ODD25D-E22 25A 4P Surface Mount Isolator

ODD32D-E22 32A 4P Surface Mount Isolator

- Standard: IEC60947-3, applicable to DC21B
- Maximum insulation voltage 1000VDC
- Rated impulse withstand voltage 12kV

NEW!

DC 2 POLE ISOLATORS - DIN RAIL MOUNT IP20



KDD-2-125	125A	2P	1000VDC Base Mount Isolator
KDD-2-160	160A	2P	1000VDC Base Mount Isolator
KDD-2-200	200A	2P	1000VDC Base Mount Isolator
KDD-2-250	250A	2P	1000VDC Base Mount Isolator
KDD-2-400	400A	2P	1000VDC Base Mount Isolator
KDD-2-630	630A	2P	1000VDC Base Mount Isolator
KDD-2-800	800A	2P	1000VDC Base Mount Isolator
KDD-2-1000	1000A	2P	1000VDC Base Mount Isolator
KDD-2-1250	1250A	2P	1000VDC Base Mount Isolator



CHANGE OVER SWITCH - DIN MOUNT



MCS40-2

40 Amp 2 Pole Change Over Switch

MCS40-3

40 Amp 3 Pole Change Over Switch

MCS63-2

63 Amp 2 Pole Change Over Switch

MCS63-4

63Amp 4 Pole Change Over Switch

AUTOMATIC CHANGE OVER SWITCH (ACS) - DIN MOUNT

ACS-C2CM80



A Micro-processor controlled change over switch that automatically changes over to generator supply in the event of a power failure. A volt free signal is activated to engage the ignition circuit of the generator. On return of the main supply, the ACS will change back and de-activate the generator ignition signal.

Rated Current of the ACS on the mains side is 80Amp. Adjustable from 20% to 100%. Rated Current of the ACS on the generator side is 60Amp. Adjustable from 20% to 100%.

In the case of an overload condition the ACS will disconnect the load for ± 10 seconds as a warning of overload condition and reconnect the load. The user will then reduce the load by switching off the non-essential equipment.

The automatic overload warning will be repeated (5) five times and will then remain disconnected. Restoration of supply can be done by pressing the reset button.

AVAILABLE IN 80A ONLY.

It is recommended that to connect this ACS with its Preset current Matching Onesto MCB/RCBOs as well as the correct Onesto Surge Protections Devices (SPD's). PLEASE NOTE: Using non Onesto MCB/RCBO and SPD's will nullify the warranty as Onesto cannot be held responsible for the quality of another manufacturers protection devices.

LED INDICATOR - DIN RAIL (NEW SLIM DESIGN) 9MM WIDE



KCI-1L-G ● Green LED 230V

KCI-1L-R ● Red LED 230V

KCI-1L-Y ● Yellow LED 230V

KCI-1L-B ● Blue LED 230V

KCI-1L-W ○ White LED 230V

KCI-3L-RWB ● ○ ● Red, White & Blue LED 230V



DC SINGLE POLE 6kA CIRCUIT BREAKERS

KCD6-110	10A	1P	6kA	125/250VDC MCB
KCD6-116	16A	1P	6kA	125/250VDC MCB
KCD6-120	20A	1P	6kA	125/250VDC MCB
KCD6-125	25A	1P	6kA	125/250VDC MCB
KCD6-132	32A	1P	6kA	125/250VDC MCB
KCD6-140	40A	1P	6kA	125/250VDC MCB
KCD6-150	50A	1P	6kA	125/250VDC MCB
KCD6-163	63A	1P	6kA	125/250VDC MCB



DC DOUBLE POLE 6kA CIRCUIT BREAKERS

KCD6-210	10A	2P	6kA	250/500VDC MCB
KCD6-216	16A	2P	6kA	250/500VDC MCB
KCD6-220	20A	2P	6kA	250/500VDC MCB
KCD6-225	25A	2P	6kA	250/500VDC MCB
KCD6-232	32A	2P	6kA	250/500VDC MCB
KCD6-240	40A	2P	6kA	250/500VDC MCB
KCD6-250	50A	2P	6kA	250/500VDC MCB
KCD6-263	63A	2P	6kA	250/500VDC MCB



DC TRIPLE POLE 6kA CIRCUIT BREAKERS

KCD6-310	10A	3P	6kA	660/750VDC MCB
KCD6-316	16A	3P	6kA	660/750VDC MCB
KCD6-320	20A	3P	6kA	660/750VDC MCB
KCD6-325	25A	3P	6kA	660/750VDC MCB
KCD6-332	32A	3P	6kA	660/750VDC MCB
KCD6-340	40A	3P	6kA	660/750VDC MCB
KCD6-350	50A	3P	6kA	660/750VDC MCB
KCD6-363	63A	3P	6kA	660/750VDC MCB



DC FOUR POLE 6kA CIRCUIT BREAKERS

KCD6-410	10A	4P	6kA	880/1000VDC MCB
KCD6-416	16A	4P	6kA	880/1000VDC MCB
KCD6-420	20A	4P	6kA	880/1000VDC MCB
KCD6-425	25A	4P	6kA	880/1000VDC MCB
KCD6-432	32A	4P	6kA	880/1000VDC MCB
KCD6-440	40A	4P	6kA	880/1000VDC MCB
KCD6-450	50A	4P	6kA	880/1000VDC MCB
KCD6-463	63A	4P	6kA	880/1000VDC MCB

- SABS in accordance to IEC 60947-2, VC8036
- Voltage rating 240/415V - 50/60Hz
- Suitable for domestic and industrial installations
- For protection and control of circuits against short circuits and overloads

- SABS in accordance to IEC 60947-2; SANS 556-1
- Operating Voltage 750VDC - 50/60Hz
- At 40°Celsius

NEW!



Code	Current Rating	kA Rating	Rated Operating Voltage
125 FRAME SIZE - 150 x 92 x 86			
KCMD-125-363	63Amp	6kA	750VDC
KCMD-125-380	80Amp	6kA	750VDC
KCMD-125-3100	100Amp	6kA	750VDC
KCMD-125-3125	125Amp	6kA	750VDC



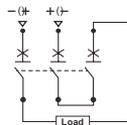
250 FRAME SIZE 170 x 107 x 95			
KCMD-250-3160	160Amp	6kA	750VDC
KCMD-250-3200	200Amp	6kA	750VDC
KCMD-250-3225	225Amp	6kA	750VDC
KCMD-250-3250	250Amp	6kA	750VDC



400 FRAME SIZE 257 x 150 x 107			
KCMD-400-3315	315Amp	6kA	750VDC
KCMD-400-3350	350Amp	6kA	750VDC
KCMD-400-3400	400Amp	6kA	750VDC

630 FRAME SIZE 270 x 182 x 114			
KCMD-630-3500	500Amp	6kA	750VDC
KCMD-630-3630	630Amp	6kA	750VDC

800 FRAME SIZE 280 x 210 x 117			
KCMD-800-3800	800Amp	6kA	750VDC



DC 750V (3P)

- SABS in accordance to IEC 60947-2; SANS 556-1
- Operating Voltage 1000VDC - 50/60Hz
- At 40°Celsius

NEW!



Code	Current Rating	kA Rating	Rated Operating Voltage
125 FRAME SIZE - 150 x 122 x 86			
KCMD-125-463	63Amp	6kA	1000VDC
KCMD-125-480	80Amp	6kA	1000VDC
KCMD-125-4100	100Amp	6kA	1000VDC
KCMD-125-4125	125Amp	6kA	1000VDC



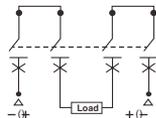
250 FRAME SIZE 170 x 142 x 95			
KCMD-250-4160	160Amp	6kA	1000VDC
KCMD-250-4200	200Amp	6kA	1000VDC
KCMD-250-4225	225Amp	6kA	1000VDC
KCMD-250-4250	250Amp	6kA	1000VDC



400 FRAME SIZE 257 x 198 x 107			
KCMD-400-4315	315Amp	6kA	1000VDC
KCMD-400-4350	350Amp	6kA	1000VDC
KCMD-400-4400	400Amp	6kA	1000VDC

630 FRAME SIZE 270 x 240 x 114			
KCMD-630-4500	500Amp	6kA	1000VDC
KCMD-630-4630	630Amp	6kA	1000VDC

800 FRAME SIZE 280 x 280 x 117			
KCMD-800-4800	800Amp	6kA	1000VDC



DC 1000V (4P)



SOLAR PUMPS

ENVIRONMENTAL PROTECTION & ENERGY SAVING



SOLAR BOREHOLE PUMPS

CYCLONE

3" DC BRUSHLESS SCREW SOLAR PUMP

NEW!



CYCLONE-77

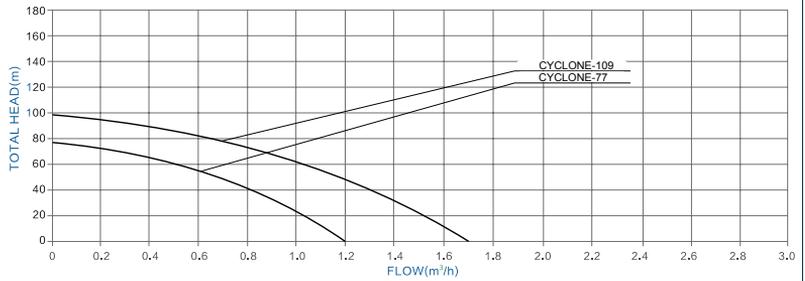


DC CONTROLLER

TECHNICAL DATA

ITEM	Voltage	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage(VOC)	Power
CYCLONE-77	36V	30V-48V	210W	1.2m ³ /h	77m	0.75"	2m	<50V	≥1.3*PUMP POWER
CYCLONE-109	48V	60V-90V	500W	1.7m ³ /h	109m	0.75"	2m	<100V	≥1.3*PUMP POWER

HYDRAULIC PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

CYCLONE-77: 330W x 1 | CYCLONE-109: 330W x 2

The Items Above Come Complete With An Installation Pack & 1 x Float Switch

TYPHOON

3" DC BRUSHLESS SOLAR PUMP WITH PLASTIC IMPELLER

NEW!



TYPHOON-50

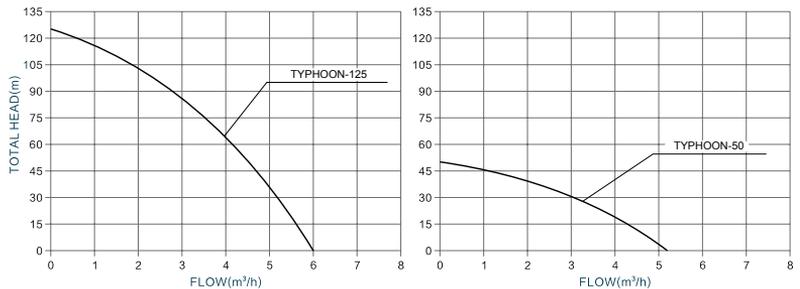


DC CONTROLLER

TECHNICAL DATA

ITEM	Voltage	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage(VOC)	Power
TYPHOON-50	72V	90V-120V	600W	5.2m ³ /h	50m	1.5"	2m	<150V	≥1.3*PUMP POWER
TYPHOON-125	110V	110V-150V	1500W	6m ³ /h	125m	1.5"	2m	<200V	≥1.3*PUMP POWER

HYDRAULIC PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

TYPHOON-50: 330W x 3 | TYPHOON-125: 330W x 8

The Items Above Come Complete With An Installation Pack & 1 x Float Switch

PLEASE BE ADVISED A WEATHERPROOF DC ISOLATOR MUST BE INCLUDED TO ISOLATE PANELS FOR MAINTENANCE.

REFER TO ODD16 to 32D/E2/E4/E22 FOR SELECTION ACCORDING TO APPLICATION

SOLAR CENTRIFUGAL PUMPS

AQUA

DC BRUSHLESS CENTRIFUGAL SOLAR PUMP

NEW!



AQUA-6



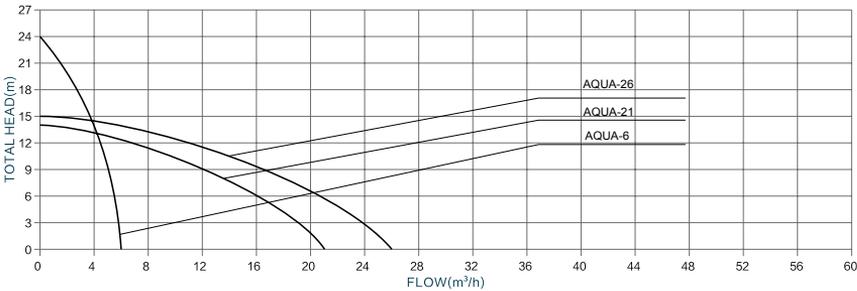
DC CONTROLLER

Portable Pump Unit

TECHNICAL DATA

ITEM	Voltage	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage(VOC)	Power
AQUA-6	48V	60V-90V	550W	6m ³ /h	24m	1"	0.6m	<100V	≥1.3*PUMP POWER
AQUA-21	72V	90V-120V	750W	21m ³ /h	14m	2"	0.6m	<150V	≥1.3*PUMP POWER
AQUA-26	72V	90V-120V	1100W	26m ³ /h	15m	2"	0.6m	<150V	≥1.3*PUMP POWER

HYDRAULIC PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

AQUA-6: 330W x 2 | AQUA-21: 330W x 3 | AQUA-26: 330W x 6

The Items Above Come Complete With An Installation Pack & 1 x Float Switch

Pumps To Be Primed Before Use

SOLAR SURFACE PUMPS

HURRICANE

DC BRUSHLESS SURFACE SOLAR PUMP

NEW!



HURRICANE-30

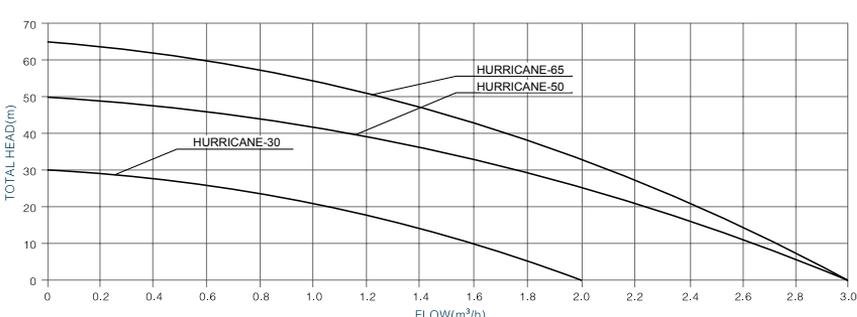


DC CONTROLLER

TECHNICAL DATA

ITEM	Voltage	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage(VOC)	Power
HURRICANE-30	24V	30V-48V	280W	2m ³ /h	30m	1 x 1"	2m	<50V	≥1.3*PUMP POWER
HURRICANE-50	48V	60V-90V	550W	3m ³ /h	50m	1 x 1"	2m	<100V	≥1.3*PUMP POWER
HURRICANE-65	72V	90V-120V	750W	3m ³ /h	65m	1 x 1"	2m	<150V	≥1.3*PUMP POWER

HYDRAULIC PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

HURRICANE-30: 330W x 1 | HURRICANE-50: 330W x 2 | HURRICANE-65: 330W x 3

The Items Above Come Complete With An Installation Pack & 1 x Float Switch

Pumps To Be Primed Before Use

PLEASE BE ADVISED A WEATHERPROOF DC ISOLATOR MUST BE INCLUDED TO ISOLATE PANELS FOR MAINTENANCE. REFER TO ODD16 to 32D/E2/E4/E22 for SELECTION ACCORDING TO APPLICATION

SOLAR POOL PUMPS

AZURE
DC BRUSHLESS SWIMMING
POOL SOLAR PUMP

NEW!



AZURE-15



AZURE-20



AZURE-27

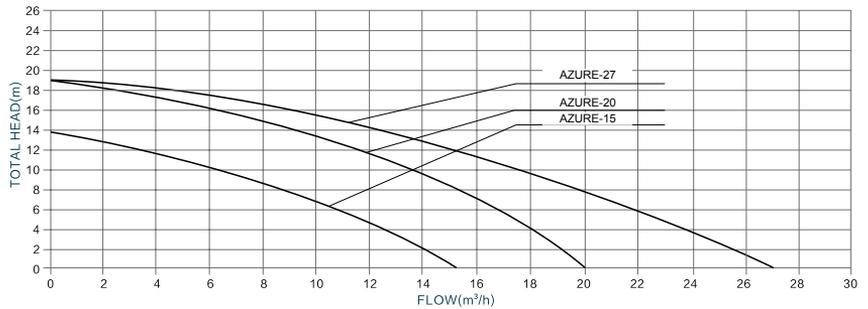


DC CONTROLLER

TECHNICAL DATA

ITEM	Voltage (DC ONLY)	Optimum input voltage (DC)	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage (VOC)	Power
AZURE-15	48V	60V-90V	500W	15m ³ /h	14m	2X2"	2m	<100V	≥1,3*PUMP POWER
AZURE-20	72V	90V-120V	900W	20m ³ /h	19m	2X2"	2m	<150V	≥1,3*PUMP POWER
AZURE-27	110V	110V-150V	1200W	27m ³ /h	19m	3X3"	2m	<200V	≥1,3*PUMP POWER

PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

AZURE-15: 330W x 2 | AZURE-20: 330W x 3-6 Panels <50-150V | AZURE-27: 330W x 3-6 Panels <50-150V

The Items Above Come Complete With Pipe Fittings & An Installation Pack

Pumps To Be Primed Before Use

AZURE-DUO
AC/DC BRUSHLESS SWIMMING
POOL SOLAR PUMP

NEW!



AZURE-DUO-20



AZURE-DUO-27

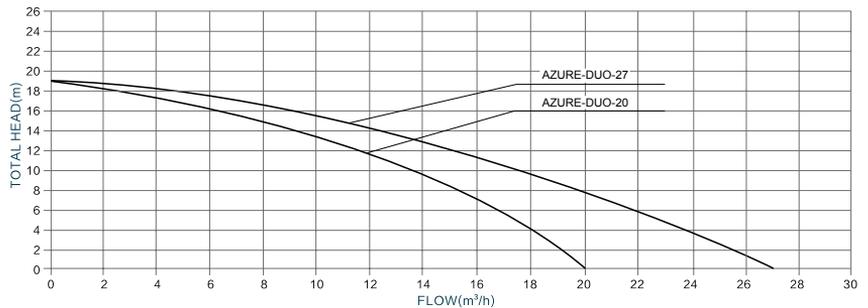


**AC/DC AUTO SWITCHING
CONTROLLER**

TECHNICAL DATA

ITEM	(AC) Voltage	(DC) Voltage	Power	Max. Flow	Max. Head	Outlet	Cable	Solar panel	
								Open circuit voltage (VOC)	Power
AZURE-DUO-20	85V-280V	80V-420V	900W	20m ³ /h	19m	2X2"	2m	<420V	≥1,3*PUMP POWER
AZURE-DUO-27	85V-280V	80V-420V	1200W	27m ³ /h	19m	3X3"	2m	<420V	≥1,3*PUMP POWER

PERFORMANCE CURVES



AMOUNT OF SOLAR PANELS REQUIRED (Sold Separately):

AZURE-DUO-20: 330W x 4-7 Panels <420V | AZURE-DUO-27: 330W x 5-7 Panels <420V

The Items Above Come Complete With Pipe Fittings & An Installation Pack

Pumps To Be Primed Before Use

PLEASE BE ADVISED A WEATHERPROOF DC ISOLATOR MUST BE INCLUDED TO ISOLATE PANELS FOR MAINTENANCE.

REFER TO ODD16 to 32D/E2/E4/E22 FOR SELECTION ACCORDING TO APPLICATION

REPLACEMENT DC PUMP CONTROLLER



HBB-24
(24VDC) Controller Box - *Used With 24VDC Pumps*

CBB-36
(36VDC) Controller Box - *Used With 36VDC Pumps*

HBB-48
(48VDC) Controller Box - *Used With 48VDC Pumps*

TCB-50
(72VDC) Controller Box - *Used With 72VDC Pumps*

TCB-125
(110VDC) Controller Box - *Used With 110VDC Pumps*

PRESSURE SWITCH

SP-2A



- Pressure setting: 20-40 psi - (1.3 - 2.7 Bar)
- Rated current: 12A
- Rated voltage: 110V-240V
- Frequency: 50/60Hz
- Maximum ambient temperature: 40 C
- Maximum Medium Temperature: 60 C
- Protection Level: IP20

*Ideal To Use With Cyclone Borehole Pumps
For Stock Watering Applications.*

*Ensure That A Non-Return Valve Is Installed At The Inlet
Of The Borehole Pump To Keep The Pipe Pressurised.*





CYCLONE, TYPHOON, AQUA, HURRICANE & AZURE DC SOLAR PUMP CONTROLLER INSTRUCTIONS

DC SOLAR PUMP CONTROLLER



LED Indicator lights

- Voltage Light (V): Illuminates in Voltage Display mode
- Speed Light (RPM): Illuminates in Speed display mode
- Current Light (A): Illuminates in Current display mode
- Power Light (W): Illuminates in power mode
- Full water Light (Tank): Illuminates when tank is full
- Low Water Light (WELL): Illuminates when water supply is low
- Solar Mode light (MPPT): Illuminates when Solar is main Power Supply
- Power and Running Mode (POWER): Flashes When Not Working, Light Stays On Whilst Working.

Test Running the Pump:

Before testing the Pump The Control Box switch must be in the OFF position. If it is a submersible pump it must be under water at ALL TIMES and should have been Pre-conditioned for at least 15 minutes. The water is the lubrication for the pump and if it is not pre conditioned properly, the bearings will not be adequately lubricated. DO NOT attempt to start the Pump if it is not submerged in water as this will also permanently damage the pump and void the warranty. You will need a large Container/ Drum of suitable size to test the Pump correctly, as well as ensuring that it does not run dry so the pump outlet should be recycled back into the container to prevent this. NEVER use the Power cable to raise or Lower the pump. Rather attached a Durable Rope or Stainless steel cable to the top of the pumps using the mounting hole provided. Also Ensure the Rope/Cable is longer than the depth at which you wish to install the pump. Use this to raise and lower the pump, never the power cable.

ATTENTION

ALWAYS keep the submersible pumps under water at all times.

Ensure all electrical connections are correct.

Should the pump not be used for a long while it should be removed from the Well/Tank /Reservoir and the body and Screw should be wiped with a vegetable oil.

Ensure that the pump has adequate water around it during pumping.

NEVER run without water or run the pump out of the water, this will void the warranty.

Make sure to place your PV panels in a sunny position facing true north (In the Southern Hemisphere) or true South (in The Northern Hemisphere) and on the correct horizontal plane. If the panel angle is fixed than an angle equal to your current latitude will be a good compromise.

Pumps are made for Clear water Pumping only. Not to be used for Dirty water or Sewerage. Premature wear or Blockages will not be covered by the warranty

Do not disassemble the Pump or Control box as this will also void the warranty. Return it to the Supplier for inspection.

PUMP OPERATION MODE

Pump Start

- Power on - If no float switch is present the system starts by default, with a Float Switch connected the pump will operate according to the Float Switch Signal.
- Button to Start - If no Float Switch is present in the system, press the RUN Key. If there is a float switch connected the Pump will operate according to the Float Switch level.
- Low Tank Water Start - If there is no signal between WELL and COM and TL is closed the pump will start immediately. If there is no TL closure wait for 15 min.
- High Tank Water Start - If there is no signal between TH and COM and TL is getting a signal the Pump will start. Without Signal to TL wait 15 mins.

Pump Stop

- Float Switch Signal • Filling: When float switches full contact closes Pump will stop.
- Emptying: When Float Switch low signal contact closed pump will stop.
- Dry Pump Shutdown - If the current is less than the set current for 20 sec the motor will stop and Show Error P48. This will reset after 10 min of the fault being cleared.
- Stop Button - Pressing the ON/OFF Button will stop or start the motor.

Pump Operation

- On start up the unit check for DC (Battery) and PV (Solar) for 20 Sec then switches to relevant mode to run.
- DC Mode (Battery)
In DC (Battery) mode, the speed is adjustable and the range is 1 000 – 4 000 RPM. The default setting is 4 000 RPM. The speed can be set by the UP and DOWN Key. When DC voltage drops below the protection voltage it cuts off pump.

PV Mode

- PV mode is also adjustable same as the DC Mode (Max Speed 4 000 RPM). The running speed of the pump is determined by the output current of the Solar panel/s. The system tracks the output of the Solar panels in Real time (MPPT).
Sunny Day = High output | Cloudy day = Low output

The MPPT indicator flashes at a high frequency when the PV output is high and flashes Slowly when the PV Output is low. If the speed of the pump drops below 600 RPM the pump will stop and bring up P46 Error. The Unit will try and restart 5 times every 10 sec and then every 10 min.

When the PV voltage drops below Low voltage for 10 Sec, a PL Fault will be displayed. The unit will try to restart for 5 times every 10 sec and then every 10 min.

- DC Reverse Polarity Protection: If DC supply polarity is reversed the Main Board and operation Panel indicators will not light up.

- Speed Setting: Start up Speed can be adjusted in Factory mode, but on power Down it reverts to Default setting.

How to set the Solar Pump RPM in memory

1. Firstly Hold the Set button until the controller shows P0.0
2. Then Press the Enter button & Press the Up or Down button until 12 is displayed
3. Press Enter button then press Up from P0.0 until P0.9, is achieved then press Enter again
4. Then use the Up and Down to set the desired pumps RPM required
5. Press Enter to lock your choice and then hold the set button until you exit the program.
The pump will then keep this RPM setting for every day and there will be no need to set everyday

AC/DC SOLAR PUMP CONTROLLER



LED Indicator lights

- Voltage Light (V): Illuminates in Voltage Display mode
- Speed Light (RPM): Illuminates in Speed display mode
- Current Light (A): Illuminates in Current display mode
- Power Light (W): Illuminates in power mode
- Full water Light (Tank): Illuminates when tank is full
- Low Water Light (WELL): Illuminates when water supply is low
- Solar Mode light (MPPT): Illuminates when Solar is main Power Supply
- Power and Running Mode (POWER): Illuminated when running with DC, flashing means pump has stopped, and 5 sec Flashing is running on AC Power

PUMP OPERATION MODE

Pump Start

- Power on - If no float switch is present the system starts by default, with a Float Switch connected the pump will operate according to the Float Switch Signal.
- Button to Start - If no Float Switch is present in the system, press the RUN Key. If there is a float switch connected the Pump will operate according to the Float Switch level.
- Low Tank Water Start - If there is no signal between WELL and COM and TL is closed the pump will start immediately. If there is no TL closure wait for 15 min.
- High Tank Water Start - If there is no signal between TH and COM and TL is getting a signal the Pump will start. Without Signal to TL wait 15 mins.

Pump Stop

- Float Switch Signal • Filling: When float switches full contact closes Pump will stop.
- Emptying: When Float Switch low signal contact closed pump will stop.
- Dry Pump Shutdown - If the current is less than the set current for 20 sec the motor will stop and Show Error P48. This will reset after 10 min of the fault being cleared.
- Stop Button - Pressing the ON/OFF Button will stop or start the motor.

Pump Operation

- On start up the unit check for DC (Battery) and PV (Solar) for 20 Sec then switches to relevant mode to run.
- DC Mode (Battery)
In DC (Battery) mode, the speed is adjustable and the range is 1 000 – 4 000 RPM. The default setting is 4 000 RPM. The speed can be set by the UP and DOWN Key. When DC voltage drops below the protection voltage it cuts off pump.

PV Mode

- PV mode is also adjustable same as the DC Mode (Max Speed 4 000 RPM). The running speed of the pump is determined by the output current of the Solar panel/s. The system tracks the output of the Solar panels in Real time (MPPT).
Sunny Day = High output | Cloudy day = Low output

The MPPT indicator flashes at a high frequency when the PV output is high and flashes Slowly when the PV Output is low. If the speed of the pump drops below 600 RPM the pump will stop and bring up P46 Error. The Unit will try and restart 5 times every 10 sec and then every 10 min.

When the PV voltage drops below Low voltage for 10 Sec, a PL Fault will be displayed. The unit will try to restart for 5 times every 10 sec and then every 10 min.

- DC Reverse Polarity Protection: If DC Supply polarity is reversed the Main Board and operation Panel indicators will not light up.
- Speed Setting: Start up Speed can be adjusted in Factory mode, but on power Down it reverts to Default setting.

AC/DC SWITCHING STRATEGY

Independent Solar Power - When the PV (Solar) is above the minimum setting the unit switches to solar power

Simultaneous AC and DC Power Supply - When the PV (Solar) output is below the minimum setting, the unit switches to simultaneous AC and DC power.

Solar DC Power switches to simultaneous AC and DC - When in DC power status and the DC drops below set values for more than 60 sec the unit will switch to AC power

Simultaneous AC and DC switching to Solar DC Power Supply - When PV (Solar) output exceeds the set values for 15 min, the unit will switch back to solar DC power mode
When the AC power is off the unit switches to Solar DC.

AC Power incoming monitoring - When Solar is below running setting and AC power is off the unit will monitor for restoration of AC power in increments of first 5 min, then 15 min and lastly 30 min.

How to set the Solar Pump RPM in memory

1. Firstly **Hold** the **Set** button until the controller shows **P0.0**
2. Then Press the **Enter** button & Press the **Up** or **Down** button until **12** is displayed
3. 3 Press Enter button then press **Up** from **P0.0** until **P0.9**, is achieved then press **Enter** again
4. Then use the Up and Down to set the desired pumps RPM required
5. Press **Enter** to lock your choice and then **hold** the **set** button until you exit the program.
The pump will then keep this RPM setting for every day and there will be no need to set everyday



SOLAR LIGHTING



Please Scan The QR
For More Exciting
Lighting Products



NEW!



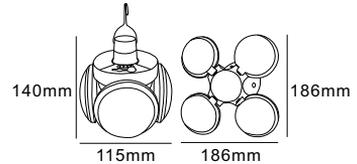
20W SOLAR LED EMERGENCY CHARGING LIGHT



2400 mAh Lithium Battery, DC5V Photovoltaic Panel,
 Power Adapter DC5V/1A
 4-6 Hours Discharge Time, IP44

***COOL WHITE ($\pm 6000K$), WHITE FITTING**
 IDEAL FOR CAMPING, STUDIES, BRAAI'S, TRAVELLING &
 MORE

OL-LSB-20W



SIZE:

NEW!



SIZE:



SOLAR LED STRING LIGHT



2200 mAh Battery, 2W Poly Panel, 5 Meters,
 10 Piece E27 3V S14 Bulbs, 5 Meters,
 Straight Filament, 0.5m2 Cable, IP44,

***WARM WHITE ($\pm 3000K$), BLACK FITTING**

SSL10-S14-WW

SSL10-S14-WW-SB
 0,5W 3V SPARE LED BULB

NEW!



6W 15 METER SOLAR LED FAIRY LIGHT



1200 mAh Battery, DC3V Poly Panel, 15 Meters,
 150 LED Lights, 8 Lighting Modes, 4-12Hours
 Discharge Time, Remote Control, IP44,

***WARM WHITE ($\pm 3000K$), BLACK FITTING**

FLS-15M-WW

20W 50 METER SOLAR LED FAIRY LIGHT



1200 mAh Battery, DC24V Poly Panel, 50 Meters,
 500 LED Lights, 8 Lighting Modes, 4-12 Hours
 Discharge Time, Remote Control, IP44,

***WARM WHITE ($\pm 3000K$), BLACK FITTING**

FLS-50M-WW

NEW!



Can be installed on balconies, pot plants, gutters etc.

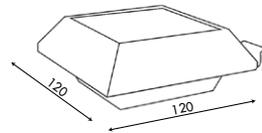
5W SOLAR LED MULTI-FUNCTIONAL LIGHT



3.7V/1200 mAh | 18650 Lithium Battery,
5V/180mAh Poly Panel,
4 Hours Discharge Time
2.5 - 3.5 Meters Mounting Height, IP44
***COOL WHITE ($\pm 6000K$), BLACK FITTING**

SGL-5W-BS-CW

SIZE:



NEW!



Can be installed on balconies, pot plants, gutters etc.

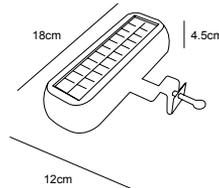
7W SOLAR LED MULTI-FUNCTIONAL LIGHT WITH SENSOR



3.7V/1200 mAh | 18650 Lithium Battery,
5.5V/140mAh Poly Panel,
4 Hours Discharge Time
2.5 - 3.5 Meters Mounting Height, Sensor, IP44
***COOL WHITE ($\pm 6000K$), MOUNTING BRACKET, BLACK FITTING**

SLS-7W-CW-S

SIZE:



NEW!



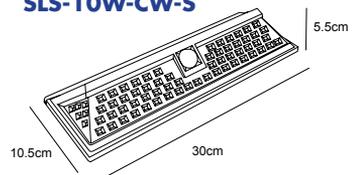
10W SOLAR LED WALL LIGHT WITH SENSOR



3.7V/2400 mAh | 18650 Lithium Battery,
5V/140mAh Poly Panel,
4 Hours Discharge Time
2.5 - 3.5 Meters Mounting Height, Sensor, IP44
***COOL WHITE ($\pm 6000K$), BLACK FITTING**

SLS-10W-CW-S

SIZE:



NEW!



GO GREEN

FOR A CLEAN & RELIABLE FUTURE



SOLAR LED BOLLARD LIGHT



1.5W LED, 12Ah Battery 38.4WH,
Solar Panel 6.2W/5V, *4-5hours Charge Time,
36hours Discharge Time,
Aluminium + PC Lens + Tempered Glass,
PIR Motion Sensor, 1-2 meter Detection Distance,
120° Beam Angle,
***WARM WHITE ($\pm 3000K$), BLACK FITTING, IP65**

PHARAOH

Can be installed in gardens, residential areas, courtyards, roads & parking lots.

Battery Reserve Feature

4H at 100% + 13H at 75%, once sensor is triggered the light operates at 100%, helping to reserve battery power



IK10 vandal resistant for outdoor lighting



Wild animals friendly without lighting pollution



Hidden base with inner screw more elegant & neat finishing



36 hours backup with fully charged battery



LED power is automatically adjusted to save energy.



High luminous flux output up to 280lm performance



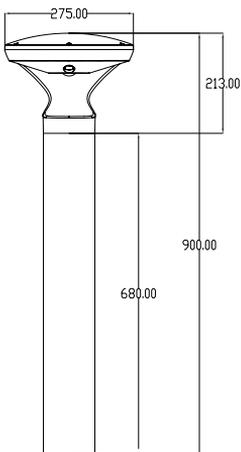
LiFePO4 battery inside more than 10 years lifetime



Equipped PIR motion sensor to save energy



ON - OFF
Dusk to Dawn automatically ON/OFF



NEW!



GO GREEN

FOR A CLEAN & RELIABLE FUTURE

- **NO WIRING**
- **REMOTE CONTROLLABLE**
- **BLUETOOTH**
- **IOS & ANDROID APP AVAILABLE**



SOLAR LED GARDEN LIGHT



40W LED, 48Ah Battery, Solar Panel 40W/4V,
*6-8hours Charge Time, 2-3 Days Discharge Time,
Intelligent Optical Control + Remote Control + IOS &
Andriod App + Bluetooth Music Rhythm,
Aluminium + PC Lens, IP65, Black Spliced Galvanized
4 Meter Pole Consisting Of 4 x 1 Meter Interlocking
Sections To Be Fastened With Supplied Screws

4M INSTALLATION HEIGHT,

***WARM WHITE, COOL WHITE & RGB (±3500
- 6000K), GREY FITTING**

CHRONUS

This product is made up of integrated parts
(solar panel, lithium battery, LED, MPPT controller)

**Can be installed in gardens, residential areas,
courtyards, roads & parking lots.**

***POLE INCLUDED**

CHRONUS-RMT

Spare Remote For Chronus



25W SOLAR LED FLOODLIGHT

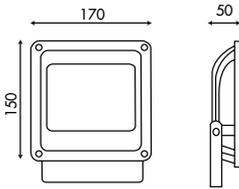


Lithium Iron Phosphate 5AH Battery, 6V/8W Photovoltaic Panel (270 x 180mm), 8-10 Hour Discharge Time, Intelligent Optical Control + Remote Control, Waterproof Cable, U Frame, IP67 ***COOL WHITE (±6000K) BLACK FITTING**



SFL-25W-CW

SIZE:



40W SOLAR LED FLOODLIGHT

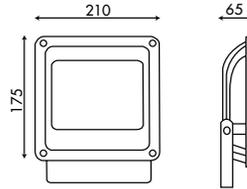


Lithium Iron Phosphate 6AH Battery, 6V/12W Photovoltaic Panel (350 x 235mm), 8-10 Hour Discharge Time, Intelligent Optical Control + Remote Control, Waterproof Cable, U Frame, IP67 ***COOL WHITE (±6000K) BLACK FITTING**



SFL-40W-CW

SIZE:



60W SOLAR LED FLOODLIGHT

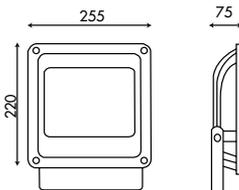


Lithium Iron Phosphate 12AH Battery, 6V/18W Photovoltaic Panel (350 x 350mm), 8-10 Hour Discharge Time, Intelligent Optical Control + Remote Control, Waterproof Cable, U Frame, IP67 ***COOL WHITE (±6000K) BLACK FITTING**



SFL-60W-CW

SIZE:



100W SOLAR LED FLOODLIGHT

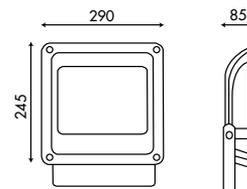


Lithium Iron Phosphate 18AH Battery, 6V/25W Photovoltaic Panel (460 x 350mm), 8-10 Hour Discharge Time, Intelligent Optical Control + Remote Control, Waterproof Cable, U Frame, IP67 ***COOL WHITE (±6000K) BLACK FITTING**



SFL-100W-CW

SIZE:





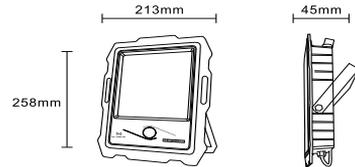
200W SOLAR LED FLOODLIGHT



Lithium Iron Phosphate 18AH Battery, 5V/25W Photovoltaic Panel (430 x 350mm), 8-10 Hour Discharge Time, Brightness Control + Sensor (6-8 Meters Detection Area) + Remote Control, 5 Meter Waterproof Cable, IP65

***COOL WHITE (±6000K) BLACK FITTING
SFL-200W-CW**

SIZE:



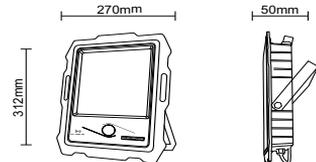
300W SOLAR LED FLOODLIGHT



Lithium Iron Phosphate 24AH Battery, 5V/28W Photovoltaic Panel (500 x 350mm), 8-10 Hour Discharge Time, Brightness Control + Sensor (6-8 Meters Detection Area) + Remote Control, 5 Meter Waterproof Cable, IP65

***COOL WHITE (±6000K) BLACK FITTING
SFL-300W-CW**

SIZE:



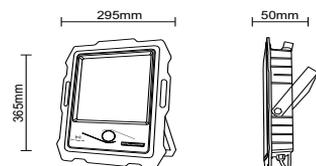
400W SOLAR LED FLOODLIGHT



Lithium Iron Phosphate 30AH Battery, 5V/35W Photovoltaic Panel (580 x 350mm), 8-10 Hour Discharge Time, Brightness Control + Sensor (6-8 Meters Detection Area) + Remote Control, 5 Meter Waterproof Cable, IP65

***COOL WHITE (±6000K) BLACK FITTING
SFL-400W-CW**

SIZE:





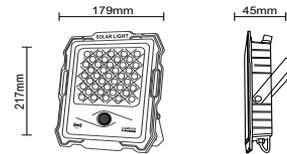
100W SOLAR LED FLOODLIGHT WITH WI-FI CCTV CAMERA



Lithium Iron Phosphate 18Ah Battery, 5V/20W Photovoltaic Panel (350 x 350mm), 12-14 Hour Discharge Time, Brightness Control + Sensor (6-8 Meters Detection Area) + Remote Control, Wi-Fi, 4mm 1080P Camera, 5 Meter Cable, IP65
***COOL WHITE ($\pm 6000K$), BLACK FITTING**

CCTV-SFL-100W-CW

SIZE:



200W SOLAR LED FLOODLIGHT WITH WI-FI CCTV CAMERA



Lithium Iron Phosphate 24Ah Battery, 5V/28W Photovoltaic Panel (500 x 350mm), 12-14 Hour Discharge Time, Brightness Control + Sensor (6-8 Meters Detection Area) + Remote Control, Wi-Fi, 4mm 1080P Camera, 5 Meter Cable, IP65
***COOL WHITE ($\pm 6000K$), BLACK FITTING**

CCTV-SFL-200W-CW

SIZE:



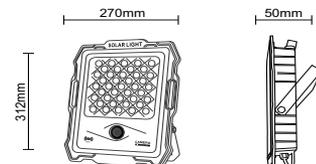
300W SOLAR LED FLOODLIGHT WITH WI-FI CCTV CAMERA



Lithium Iron Phosphate 30Ah Battery, 5V/35W Photovoltaic Panel (580 x 350mm), 12-14 Hour Discharge Time, Brightness Control + Sensor (6-8 Meters Detection Area) + Remote Control, Wi-Fi, 4mm 1080P Camera, 5 Meter Cable, IP65
***COOL WHITE ($\pm 6000K$), BLACK FITTING**

CCTV-SFL-300W-CW

SIZE:



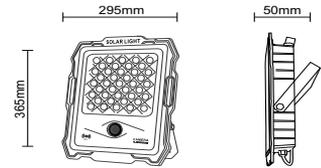


400W SOLAR LED FLOODLIGHT WITH WI-FI CCTV CAMERA 

Lithium Iron Phosphate 42Ah Battery, 5V/40W Photovoltaic Panel (630 x 350mm), 12-14 Hour Discharge Time, Brightness Control + Sensor (6-8 Meters Detection Area) + Remote Control, Wi-Fi, 4mm 1080P Camera, 5 Meter Cable, IP65

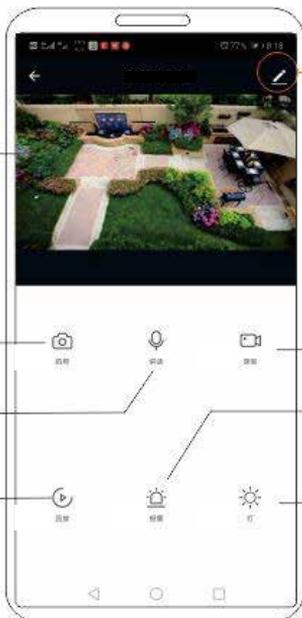
***COOL WHITE (±6000K), BLACK FITTING
CCTV-SFL-400W-CW**

SIZE:



These lights support offsite monitoring via Wi-Fi (ensure that wi-fi signal strength is sufficient) using a smart phone application.

Download the App "TuyaSmart"



Live video

Take photos

Talk back

Playback video

Settings
(Settings for sharing, storing, removing devices, etc.)

Record video

Motion detection alarm

Light switch and timed light

30W INTEGRATED SOLAR LED STREET LIGHT



30W LED (110lm per Watt), 6Ah 3.2V Battery, Solar Panel 6W/5V, *10hours Charge Time, 12-16hours Discharge Time, Work Temp -20°C to 45°C, 40 Square Meters Illumination Area, ABS Plastic + PC Lens, IP65, **6M INSTALLATION HEIGHT WALL/POLE, *COOL WHITE (±6500K), ABS PLASTIC SUITABLE FOR WALL OR POLE INSTALLATION**



ELSL-30W-CW

This product is made up of integrated parts (solar panel, lithium battery, LED, MPPT controller)
Can be installed in gardens, residential areas, courtyards, roads & parking lots.

L:395xW:210xH:50mm

***POLE EXCLUDED**

10 HOUR CHARGE TIME IS BASED ON CLEAR & BRIGHT SUNNY DAY WITH CORRECT PANEL ORIENTATION TO THE SUN

60W INTEGRATED SOLAR LED STREET LIGHT



60W LED (110lm per Watt), 9Ah 3.2V Battery, Solar Panel 9W/5V, *10hours Charge Time, 12-16hours Discharge Time, Work Temp -20°C to 40°C, 80 Square Meters Illumination Area, ABS Plastic + PC Lens, IP65, **6M INSTALLATION HEIGHT WALL/POLE, *COOL WHITE (±6500K), ABS PLASTIC SUITABLE FOR WALL OR POLE INSTALLATION**



ELSL-60W-CW

This product is made up of integrated parts (solar panel, lithium battery, LED, MPPT controller)
Can be installed in gardens, residential areas, courtyards, roads & parking lots.

L:480xW:220xH:50mm

***POLE EXCLUDED**

10 HOUR CHARGE TIME IS BASED ON CLEAR & BRIGHT SUNNY DAY WITH CORRECT PANEL ORIENTATION TO THE SUN



90W INTEGRATED SOLAR LED STREET LIGHT



90W LED (110lm per Watt), 12Ah 3.2V Battery, Solar Panel 12W/5V, *10hours Charge Time, 12-16hours Discharge Time, Work Temp -20°C to 45°C, 120 Square Meters Illumination Area, ABS Plastic + PC Lens, IP65, **8M INSTALLATION HEIGHT WALL/POLE, *COOL WHITE (±6500K), ABS PLASTIC SUITABLE FOR WALL OR POLE INSTALLATION**

ELSL-90W-CW

This product is made up of integrated parts (solar panel, lithium battery, LED, MPPT controller) **Can be installed in gardens, residential areas, courtyards, roads & parking lots.**

L:620xW:230xH:55mm

***POLE EXCLUDED**

10 HOUR CHARGE TIME IS BASED ON CLEAR & BRIGHT SUNNY DAY WITH CORRECT PANEL ORIENTATION TO THE SUN



120W INTEGRATED SOLAR LED STREET LIGHT



120W LED (110lm per Watt), 12Ah 3.2V Battery, Solar Panel 20W/9V, *10hours Charge Time, 12-16hours Discharge Time, Work Temp -20°C to 45°C, 160 Square Meters Illumination Area, ABS Plastic + PC Lens, IP65, **8M INSTALLATION HEIGHT WALL/POLE, *COOL WHITE (±6500K), ABS PLASTIC SUITABLE FOR WALL OR POLE INSTALLATION**

ELSL-120W-CW

This product is made up of integrated parts (solar panel, lithium battery, LED, MPPT controller) **Can be installed in gardens, residential areas, courtyards, roads & parking lots.**

L:725xW:240xH:55mm

***POLE EXCLUDED**

10 HOUR CHARGE TIME IS BASED ON CLEAR & BRIGHT SUNNY DAY WITH CORRECT PANEL ORIENTATION TO THE SUN

30W, 60W, 90W & 120W SOLAR LED POLE



50 x 50mm White Pole For The 30W, 60W, 90W
& 120W Solar LED Street Light ***WHITE FINISH**

SUITABLE FOR WALL INSTALLATION



ELSL-PL

***To Be Used With The ELSL Solar lighting Only.**





L:520xW:260xH:80mm

100W SOLAR LED STREET LIGHT



100W LED (110lm per Watt), 18Ah 12V Battery, Solar Panel 25W/5V (430 x 350mm), *6-8hours Charge Time, 12-16hours Discharge Time, Intelligent Optical Control + Remote Control, Waterproof Cable, U Frame, Aluminium + PC Lens, IP65

**3-4M INSTALLATION HEIGHT WALL/POLE,
*COOL WHITE (±6500K)**

SUITABLE FOR WALL OR POLE INSTALLATION

E-SSL-100W-CW

Can be installed in gardens, residential areas, courtyards, roads & parking lots.

***POLE EXCLUDED**

6-8 HOUR CHARGE TIME IS BASED ON CLEAR & BRIGHT SUNNY DAY WITH CORRECT PANEL ORIENTATION TO THE SUN



L:520xW:260xH:80mm

200W SOLAR LED STREET LIGHT



200W LED (110lm per Watt), 30Ah 12V Battery, Solar Panel 35W/5V (580 x 350mm), *6-8 hours Charge Time, 12-16hours Discharge Time, Intelligent Optical Control + Remote Control, Waterproof Cable, U Frame, Aluminium + PC Lens, IP65

**4-5M INSTALLATION HEIGHT WALL/POLE,
*COOL WHITE (±6500K)**

SUITABLE FOR WALL OR POLE INSTALLATION

E-SSL-200W-CW

Can be installed in gardens, residential areas, courtyards, roads & parking lots.

***POLE EXCLUDED**

6-8 HOUR CHARGE TIME IS BASED ON CLEAR & BRIGHT SUNNY DAY WITH CORRECT PANEL ORIENTATION TO THE SUN



L:600xW:300xH:80mm

300W SOLAR LED STREET LIGHT



300W LED (110lm per Watt), 36Ah 12V Battery, Solar Panel 40W/5V (630 x 350mm), *6-8hours Charge Time, 12-16hours Discharge Time, Intelligent Optical Control + Remote Control, Waterproof Cable, U Frame, Aluminium + PC Lens, IP65

**4-5M INSTALLATION HEIGHT WALL/POLE,
*COOL WHITE (±6500K)**

SUITABLE FOR WALL OR POLE INSTALLATION

E-SSL-300W-CW

**Can be installed in gardens, residential areas,
courtyards, roads & parking lots.**

***POLE EXCLUDED**

6-8 HOUR CHARGE TIME IS BASED ON CLEAR & BRIGHT SUNNY DAY WITH CORRECT PANEL ORIENTATION TO THE SUN



L:600xW:300xH:80mm

400W SOLAR LED STREET LIGHT



400W LED (110lm per Watt), 48Ah 12V Battery, Solar Panel 50W/5V (670 x 445mm), *6-8hours Charge Time, 12-16hours Discharge Time, Intelligent Optical Control + Remote Control, Waterproof Cable, U Frame, Aluminium + PC Lens, IP65

**5-6M INSTALLATION HEIGHT WALL/POLE,
*COOL WHITE (±6500K)**

SUITABLE FOR WALL OR POLE INSTALLATION

E-SSL-400W-CW

**Can be installed in gardens, residential areas,
courtyards, roads & parking lots.**

***POLE EXCLUDED**

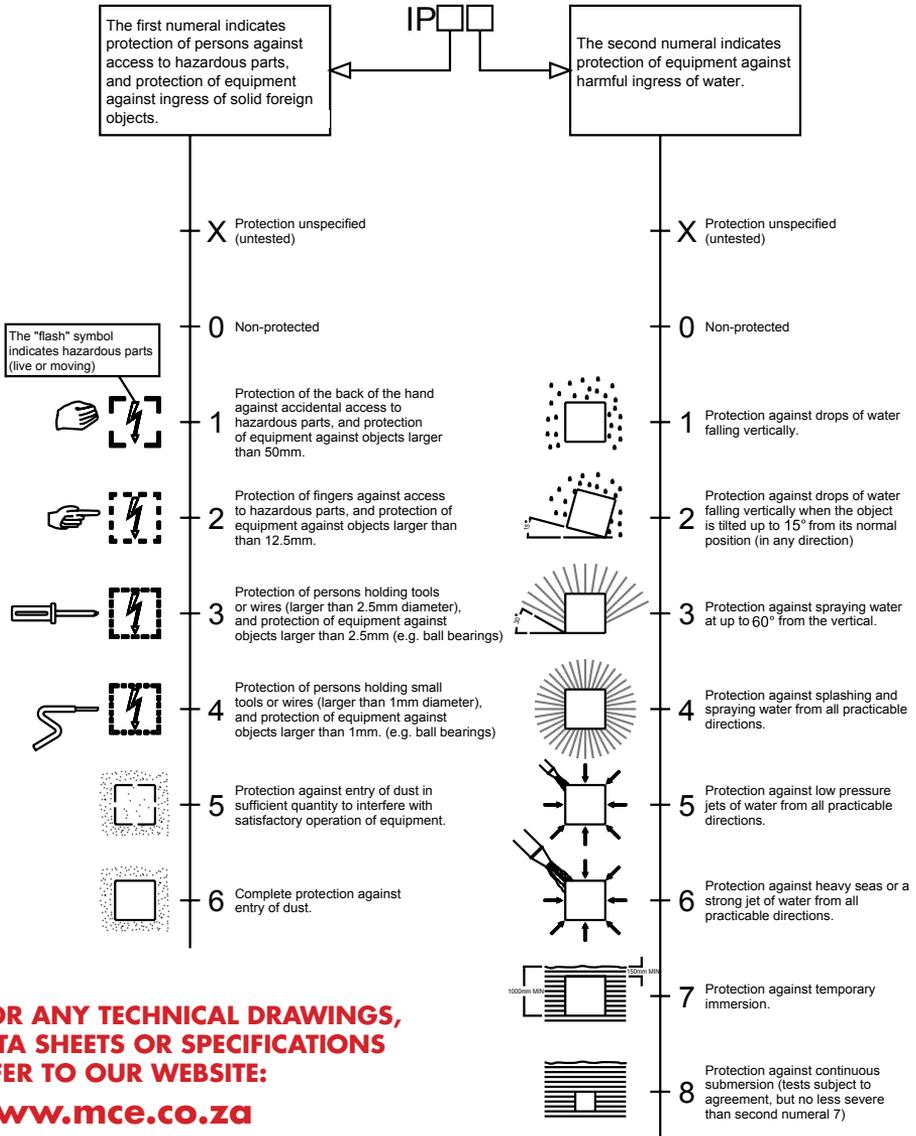
6-8 HOUR CHARGE TIME IS BASED ON CLEAR & BRIGHT SUNNY DAY WITH CORRECT PANEL ORIENTATION TO THE SUN

IP RATING CHART

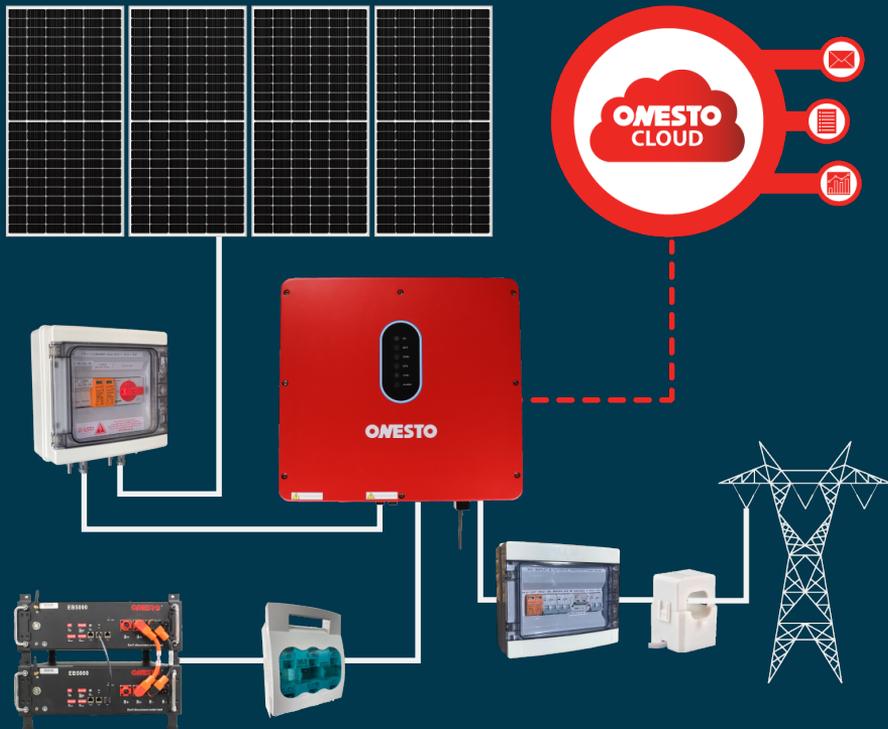
Protection of persons and protection of equipment indicated by the IP code.

Protection provided by enclosures for electrical equipment is indicated by the IP codes

CHARACTERISTIC NUMERALS



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