Mars solar

MARS-SOLAR
PRODUCTS
CATALOG

SOLAR SOLUTIONS

ISOLATOR . MPPT . INVERTER . SOLAR PANEL/BLANKET . BATTERY

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BATTERY ISOLATOR

- Wide voltage power IC. Large capacitance Filter, Maximum with stand voltage 36V
- The aluminum alloy casing is easy to install, resistant to pressure, shock, and paint to against the tide
- Auxiliary switch for remote control
- The indicator light indicates the working state, which is convenient to use
- Automatically adjust the time of the suction according to the change of voltage to protect the original car battery

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Feature

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- Automatically adjust the time of the suction according to the change of voltage to protect the original car battery.

Adding another set of batteries to the car, the original car generator can be used to charge the installed battery. When the car is turned off, the starting battery and the additional battery are automatically isolated to ensure that the starting battery is not discharged. Intelligent battery detection reduces unnecessary switching operations, avoids various faults caused by improper operation, and does not require the ignition switch to switch signal lines.

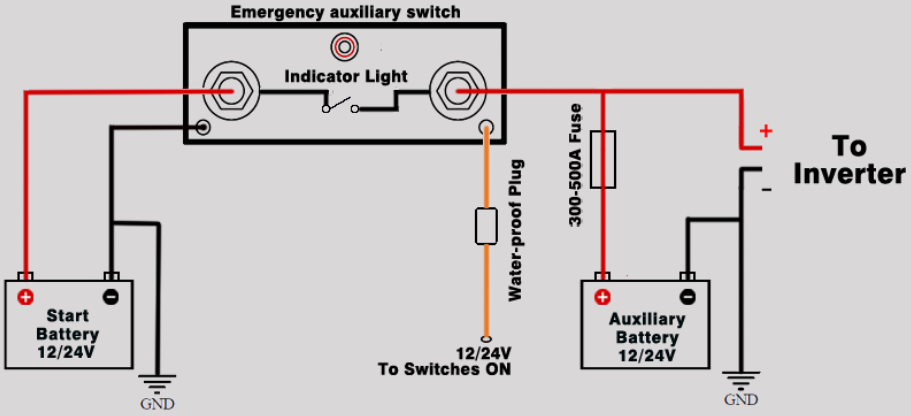
MARS-SOLAR 12/24V battery isolator is not simply based on the battery voltage and a fixed delay, but rather determines the trend (voltage rise or fall) and only performs the reverse operation if the reverse trend exceeds a certain time. The delay time is the voltage change trend determines that in the case of large current discharge.

TRE battery isolators will make an intelligent judgment, and will not disconnect the additional battery due to the excessive current of the load, such as electric winch, super sound, inverter, etc.

Model	MS-BI-150	MS-BI-400
Input voltage	9-36 VDC	
Continuous current	Isolator current value	
Peak current	Double value of the current value on the isolator (30 seconds)	
Connection voltage (Delay 2 minutes)	13/26 V	
Connection voltage (Delay 1 minute)	13.8/27.6V	
Disconnect voltage (Delay 5 minutes)	12.8/25.6 V	
Disconnect voltage (Delay 20 seconds)	11.8/23.6V	
Overvoltage Disconnection	16/32V	
Stand-by current	<30mA	
Working current range	80-150A	200A-400A
Weight	0.6KG	1.2KG
Product Size(mm)	100x110x55	155x150x55

BATTERY ISOLATOR

Standard Setup Method



Advantages:

- Unlike other isolators, the different flashing frequencies of the TRE isolators indicate their working status.
- The TRE isolator intelligently detects the main and auxiliary batteries and charges them in remote operation. Of course, two-way intelligent detection can also be achieved at startup.
- The TRE intelligent isolator will restart automatically to aviod the highest peak of charging. Protect the original vehicle line in stages according to the voltage.

Tech Tips

- No voltage loss (no voltage drop): lower operating current.
  In off-road vehicles, RVs and other equipment, electrical energy is very important. TRE isolators, only need small current when using, no energy consumption when the relay is maintained.
- Priority start battery:
  In the standard setup, the generator is directly connected to the start battery, and the auxiliary batteries are connected to the starter battery through the isolator. When there is a start signal and the main battery voltage > 13.2V/26.4V, the isolator will delay for 1 minute to operate, then the generator charges the main and auxiliary batteries at the same time.
- Parallel connection in emergency:
  Manual supply function: Press the emergency auxiliary switch on the isolator for more than 3 seconds. When you hear the sound and saw the light is on, the main and auxiliary batteries are connected, and the delay is 60 seconds. Then it will be automatically transferred, automatically , no need to operate again.
- 1. TRE isolators can be used in 12V or 24V systems , automatic detection and adaptation to 12/24V system.
  2. Install the isolator near a smaller capacity battery (usually the starter battery), in a dry position, away from heat.
  3. The isolator is equipped with a grounding wire. Connect the isolator ground terminal to the common ground(car frame) .
  4. When the power is turned on for the first time, the indicator light flashes for 6 seconds to enter normal operation.
  When the isolator is engaged, the indicator light is always on;
  When the isolator is isolated, it flashes every five seconds;
  When the isolator is going to be engaged,it flashes 2 times every five seconds .
  When the isolator is going to be disconnect,the light turn off 2 times every 5 seconds.

MPPT SOLAR CONTROLLER

BETTERY

Management Systems

- Excellent thermal design
- WIFI extension, RS protocol
- Maximum power point tracking
- Over charge, over discharge, overload, short circuit protection
- Automatically adjust parameters to improve battery life

MPPT

Feature

- Excellent thermal design
- Wifi extension, RS protocol
- Maximum power point tracking
- Over charge, over discharge, overload, short circuit protection
- Automatically adjust parameters to improve battery life

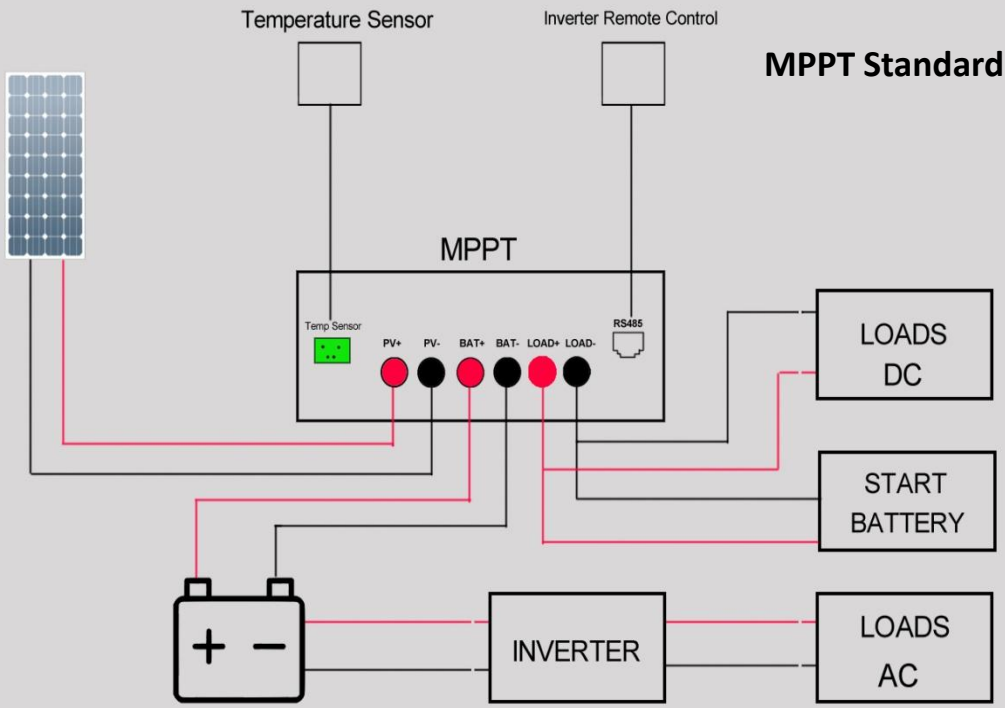
Benefits

Perfect for 12-volt battery charging or multiple panels can be wired in series.
Includes built-in blocking diode to prevent reverse flow of electricity.
Low degradation and excellent performance under high temperature and low light conditions.
Robust aluminum frame ensures the modules to withstand wind loads up to 2400Pa.

Solar controllers, also known as solar charge and discharge control devices, are commonly used in common solar off-grid systems .The devices used to protect the battery from solar panels. The MPPT controller charging mode can greatly improve the power generation efficiency, which is about half the efficiency of the traditional solar power generation system. MSMT series is the MPPT preferred product launched by MARS-SOLAR. It adopts the industry-leading design scheme, efficient MPPT controller algorithm, MPPT efficiency is not less than 99.5%, and the conversion efficiency of the whole machine is up to 98%. It is widely used in off road, motor home, yacht and so on.

Model		MS-MT-20	MS-MT-30
Output current		20A	30A
System voltage		Automatic recogrition	
Standby power		0.5W ~ 1.2W	
MPPT efficiency		= 99.5%	
Controller Properties		MPPT(Maximum power point tracking)	
Heat-dissipating method		Intelligent fan cooling	
Rated PV Power	12V system	260W	390W
	24V system	520W	780W
	36V system	780W	1170W
	48V system	1040W	1560W
Display mode		High-definition LCD segment code backlight	
Communication mode		RS485 monitoring/WiFi monitoring	
Operation Temperature		-20℃~+50℃	
Gross Weight(KG)		3KG	
Product Size(mm)		240*168*66	

MPPT Standard Installation



Temperature Senor

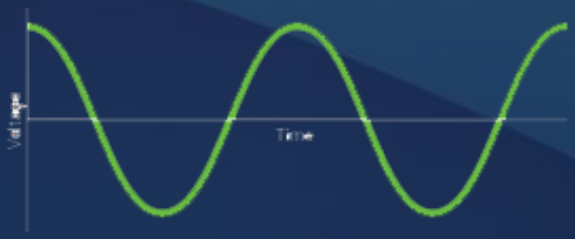
For solar systems, temperature senor is very important to charge the battery with the correct voltage. A battery with a low temperature requires a higher voltage, and a battery with a higher temperature requires a lower voltage to avoid overcharging.

Feature

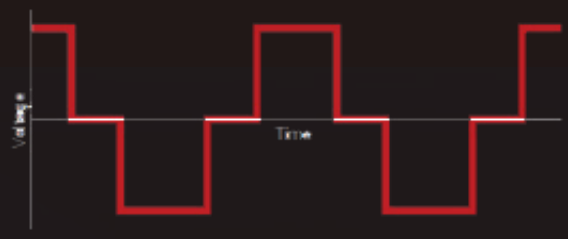
- High temperature resistant, high stability components, fast response, stable long-term performance.
- Shell screw fixing design, easy to install and stabilize.
- Moisture-proof and can be used in high temperature and high humidity environment.

SOLAR INVERTER

PURE SINE WAVE INVERTER



MODIFIED SINE WAVE INVERTER



Mars solar | Pure Sine Wave Inverter

- **Feature**
- Fully Safety Protections : Over voltage,Low voltage,Overload Short circuit,Over heat protections. Isolated Input,Output design.
- Strong and Durable aluminum alloy provide best protection from drops and bumps. Integrated cooling fan helps prevents shortages.
- Perfect sine wave provide the best Performance ,make perfect pure sine wave AC output and optimize machine performance as much as possible.
- LED Display for both DC volt and AC volt which makes the power usage clear for users.

Inverter Remote Control

MARS-SOLAR Inverter Remote Control allows you to power on/off your Cobra inverter from remote locations, allows you to mount your inverter in hidden locations that will deter theft and give your car a more aesthetically pleasing look.

MARS-SOLAR inverter converts DC power (battery, battery) into alternating current (typically 220V, 50Hz sine wave). It consists of an inverter bridge, control logic and filter circuits.

Simply put, an inverter is an electronic device that converts low voltage (12 or 24 volts or 48 volts) direct current to 220 volts AC. We usually use volt AC to be converted to DC, but the inverter has the opposite effect, so we call it as inverter

The output voltage waveform of a sine wave inverter, the distortion is very low, and its output waveform is basically consistent with the AC waveform of the mains grid. In fact, the excellent sine wave inverter provides higher AC power than the grid.

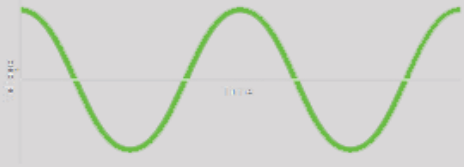
Power usage guide:

Model	MS-PI-400	MS-PI-750	MS-PI-1000	MS-PI-1500	MS-PI-2000	MS-PI-3000
Continuous power	400W	750W	1000W	1500W	2000W	3000W
Peak power	800W	1500W	2000W	3000W	4000W	6000W
DC input	DC 12V(DC 11-15V)					
	DC 24V(DC 22-30V)					
Output frequency	50±3 Hz					
Output wave	Pure sine wave					
Efficiency	>85%					
No load Current	12V input	INPUT DC13V<1.5A				
	24V input	INPUT DC26V<0.8A				
Input Low Voltage alarm	12V input	DC 10.2-10.8V				
	24V input	DC 20.4-21.6V				
Input Low Voltage shut down	12V input	DC 9.2-9.8V				
	24V input	DC10.2-10.8V				
Input Over Voltage shut down	12V input	DC 15-16V				
	24V input	DC 30-32V				
Product Size(mm)	220*145*66	320*170*100	340*215*115	340*215*115	430*260*140	430*260*140

PURE SINE WAVE INVERTER INSTALLATION

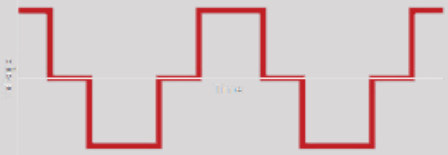
Pure sine wave inverters

High efficiency, stable sine wave output, high frequency technology, small size and light weight, suitable for all kinds of loads. Can be connected to any common electrical equipment without any interference. It can power just about any AC appliance without risk of damage.



Modified sine wave inverters

Using a more basic form of technology than pure sine wave inverters they produce power ,the waveform of the Modified sine wave is still composed of poly line, which still belongs to the square wave , poor continuity, and has a dead zone.



Which Model Do I Need?

MODEL	Suitable applications
MS-PI-400	Phone and camera chargers, CD players, GPS, computers, bi-pap machines, laptops
MS-PI-750	Any of the above plus TVs, refrigerant recovery machines
MS-PI-1000	Any of the above plus blenders, power tools
MS-PI-1500	Any of the above plus hairdryers, irons
MS-PI-2000	Any of the above plus microwaves
MS-PI-3000	Any of the above plus heaters, kettles

MODIFIED SINE WAVE INVERTERS

MARS-SOLAR Solar inverter is the most important elements of the solar electric power system. It converts the variable direct current (DC) output of a photovoltaic (PV) solar panel into alternating 240V current (AC). This AC electricity then can be fed into your home or car to operate. The output waveform of the Modified sine wave inverter is modified to be approximately pure sinusoidal waveform, which is mainly designed to meet the efficiency requirements of the photovoltaic system. These inverters are capable of handling a wide range of loads, electronics and household items. Including TVs, VCRs, satellite receivers, computers and printers.

The inverter provides AC power output, just like a household electric socket, which can be used for outdoor recreation and power supply for electronic tools. With the development of technology, more and more electronic devices are needed for users to move. The inverter can provide sufficient AC power for these devices at any time, providing users with a convenient mobile, excellent speed current, strong voltage and 360°protection.

100W

500w

1000w

1000w

Model	SM-MI-300	SM-MI-500	SM-MI-1000
power	300w	500w	1000w
Peak power	600w	1000w	2000w
Input voltage	DC12/24V	DC12/24V	DC12/24V
Output voltage	AC 100V-120VIAC/AC 220V-240VIAC		
Frequency	50/60Hz±3		
USB output	DC 5V 2.1A*1		
Protection Specification	Overload Protection		
	Overheat Protection		
	Short-circuit Protection		
	Low voltage Protection		
	Overvoltage Protection		
Output waveform	Modified sine wave		
Efficency	80%-90%		
Size	188*130*66mm	240*130*66mm	250*167*78mm
N.W	1.73kg	4.5 kg	5kg
Product Size(mm)	240*168*66		

Feature

- External insurance sheet.
- Multiple automatic protection.
- Front and rear isolation design.
- Stable power continuous output.
- Multiple output receptacles supported.
- Isolated input/output design with 360°protections

WARNING !

Some devices may not work on a modified sine wave inverter . we don't suggest that you use a modified sine wave inverter to charge batteries for devices like laptops and power tools or operate phone chargers.

Monocrystalline Solar Panels

Feature

- Higher area efficiency
- Resistant to salt mist corrosion
- Easy and flexible installation for various applications
- High quality junction box and connector system for a longer life time

Monocrystalline Solar Panels have been the go-to the choice for many years. They are among the oldest, most efficient and most dependable ways to produce electricity from the sun. MARS-SOLAR Monocrystalline Solar Panels are high efficiency 12-Volt solar panels featuring sturdy aluminum frames and high transparency tempered glass tops. Use it for your RV when camping, or during beach trips with the family, either way this monocrystalline panel provides you with the most efficiency per space.

Benefits

Perfect for 12-volt battery charging or multiple panels can be wired in series.
Includes built-in blocking diode to prevent reverse flow of electricity.
Low degradation and excellent performance under high temperature and low light conditions.
Robust aluminum frame ensures the modules to withstand wind loads up to 2400Pa.

Model	MSPL-50	MSPL-100	MSPL-120	MSPL-150
Peak power output	50W	100W	120W	150W
Maximum power voltage	17.3V	18.17V	18.9V	18V
Maximum power current	2.90A	5.5A	6.35A	8.33A
Open circuit voltage	21.6V	21.6V	22.68V	21.6V
Short circuit current	3.18A	6.06A	7.30A	9.16A
Cell type:	Monocrystalline			
Operating temperature range:	--40°C to +85°C			
Dimensions(MM)	630*540	1196*541*30	1200*670	1476*671
Weigh	3.5KG	7KG	8KG	12KG

Solar Panel Mounts

The MARS-SOLAR ABS solar mounting bracket can be used with any aluminium framed solar panel to provide a secure fixing for vehicles, caravans, boats, outbuildings etc. The mounts will support the solar panel at the optimum height above the surface to enable aeration from underneath, ensuring the solar panel functions as efficiently as possible.

Model: MS-PMT-1
4 x ABS Corner Mounts

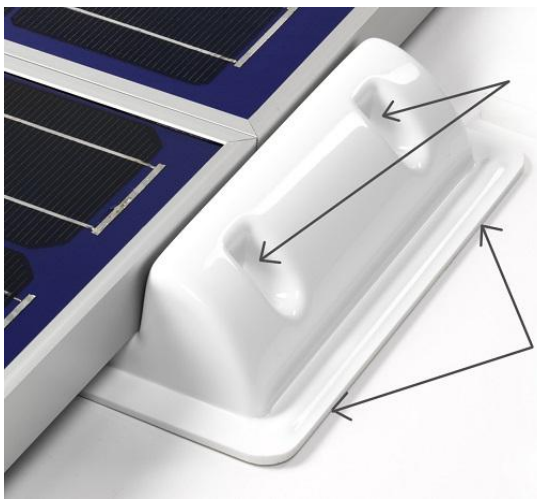
Dimension:
L: 150 mm
W: 90 mm
H: 60 mm

Model: MS-PMT-2
2 x ABS Side Mounts

Dimension:
L: 180 mm
W: 90 mm
H: 60 mm

Model: MS-PMT-3
2 x ABS Spoiler Mounts

Dimension:
L: 520 mm
W: 105 mm
H: 60.3 mm



Drill holes and screw ABS mounts to panels.

Use appropriate silicone adhesive, double-sided tape or suitable screws (or a combination of these) to mount ABS mounts to caravan or RV roof.

Feature

- Quick installation
- UV resistance
- Protect the corner of solar panels from damage
- Safety bonded to the surface removing the need to drill holes

Double Cable Gland

The Double Cable Gland (MS-PMT-4) is a simple water proof solution for either the positive or negative solar panel wire to pass through an RV or caravan roof.

FOLDING SOLAR PANELS

The MARS-SOLAR Monocrystalline Folding Solar Panel is an eco-friendly backup power source that's ideal for outdoor sites and activities. It can be folded neatly in seconds, and is conveniently portable with its sturdy carry handle and lightweight aluminium frame. With MARS-SOLAR Monocrystalline portable solar panel, access solar power anywhere!

Feature

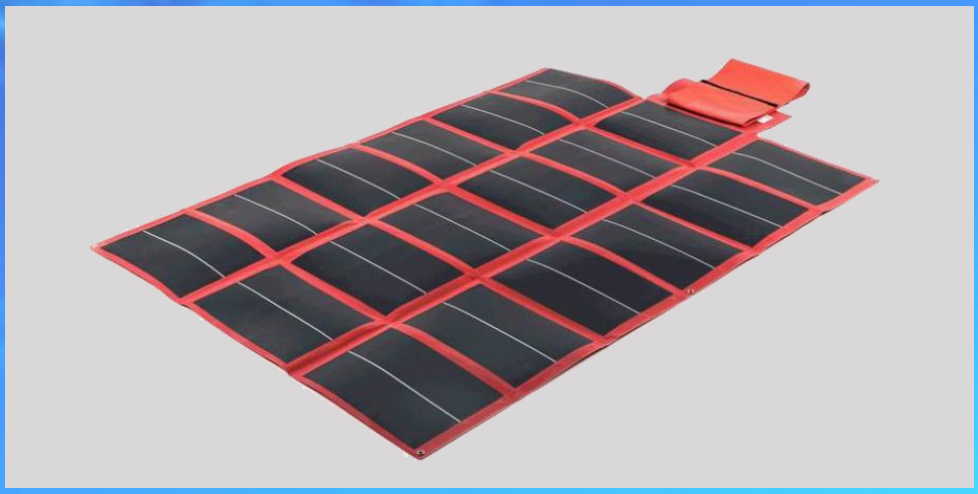
- Monocrystalline Solar Cells, High Energy Conversion.
- Extensive Usage, ideal for hiking, camping, and small home power systems, caravan, RV, boat.
- Eco-Friendly Backup Power Source
- Easy to carry, easy to use, no construction needed, comes ready to use.

Model	MS-FP-120	MS-FP-160
Peak power output	120W	160W
Maximum power voltage	18V	18.1V
Maximum power current	6.66A	9.11A
Open circuit voltage	21.6V	22.038V
Short circuit current	7.06A	10.9A
Cell type	Monocrystalline	
Operating temperature range	--40°C to +80°C	
Dimensions closed	785 * 520 * 65 mm	758* 670* 60mm
Dimensions opened	1040 * 785 * 30mm	1516* 670* 30mm
Weight	12kg	15kg

SOLAR BLANKET

Feature

- Amorphous silicon battery design
- Flexible design reduces the risk of cell breakage/cracks
- Compact & lightweight
- Anderson 50 plug connectors



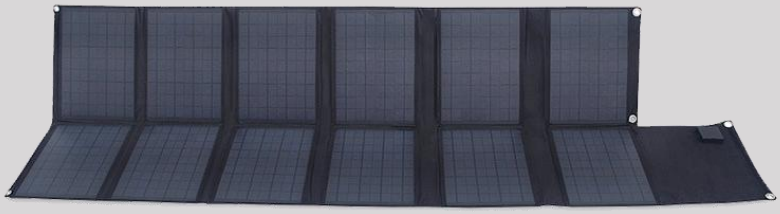
The MARS-SOLAR Portable Solar Blanket is the apex in portable, convenient and lightweight solar power to suit any camping lifestyle. Using the latest in solar technology it offers superior flexibility in a light weight, conveniently sized package.

Advantages

- High efficiency: The efficiency of the foldable amorphous solar charger is 8%. Max efficiency is 22.5% to flexible mono portable solar charger
- Lightweight & thin-film: Thickness is only 1mm
- Performance: Bypass diodes for shadow tolerance, Water-proof, UV-proof, Dust-proof. Very good performance of preventing from atrocious weather

Model	MS-BLT-112
Peak Power	112W
Solar cell	CIGS,16.5% efficiency
Output	18V*6.3A（Max）
Open size	1860*1185*1MM
Net weight	4.8KG
Working Temperature	-20°C-70°C
Output cable	USB, DC, Battery clip ect

SOLAR FOLDING BAG



Converting virtually unlimited supply of solar power to much needed battery juice for your mobile devices such as an iPhone, iPad and many, many more USB portable devices. Monocrystalline silicon design, high solar conversion rate, folding design, easy to carry and use.

Feature

- No additional battery needed for charging external devices, 100% green energy with zero carbon footprint
- Built-in dual USB ports .
- Plus one 12-Volt DC output port .
- Highest-efficiency mono-crystalline panels fold up into a compact, portable and light weight pack .
- Made from scratch-resistant and weather-resistance fabric, ideal for outdoor use.

Model	MS-FB-120	MS-FB-150	MS-FB-200
Maximum Power(P max)	120W	150W	200W
Max Power Voltage	18 V	18 V	18 V
Max Power Current	6.7A	8.33A	12.1A
Open-Circuit Voltage	19.08V	26.4V	19.8V
Short-Circuit Current	10A	8.89A	13.3A
Solar Material		Monocrystalline	
Temperature Range	-20℃~+50℃	-40° C to +85° C	-40° C to +85° C
Unfold size	1860*900*7mm	1570*540*5mm	2200*535*5mm
Folding Size	450*290*125mm	540*320*23mm	535*540*24mm

SOLAR REGULATOR

Pulse Width Modulation (PWM) Solar Regulator is the most effective means to achieve constant voltage battery charging by switching the solar system controller's power devices. When in PWM regulation, the current from the solar array tapers according to the battery's condition and recharging needs.
PWM solar chargers use technology similar to other modern high quality battery chargers. When a battery voltage reaches the regulation set point, the PWM algorithm slowly reduces the charging current to avoid heating and gassing of the battery, yet the charging continues to return the maximum amount of energy to the battery in the shortest time.

Which Regulator you need ?

According to the system voltage,
If it is a 12V system, choose the 10A regulator.
The regulator can withstand 12V*10A = 120W.
The maximum load of solar panels should not exceed 150W.
If it is a 24V system, choose the 20A regulator
The regulator can withstand 24V*20A = 480W
The maximum load of solar panels should not exceed 500W.

	12V	24V
10A	120W	240W
20A	240W	480W

Model	MS-RL-20	MS-RL-30
Output current	20A	30A
Battery Voltage	12V / 24V AUTO	
Input Voltage	< 50V	
Rated Current	20A	30A
Light Control	YES	
Time Control	YES	
Temp Compensation	-4mV/degress centigrade	
Charge Mode	PWM	
No load loss	10mA	20mA
Size	152*107*42mm	165*133*43.5mm
N.W	0.35KG	0.45KG

Feature

- Mutiple Electric Protection.
- High efficiency series charging mode extends battery life.
- Dual mosfet reverse current protection, low heat production.
- Comes with a display that can clearly indicate the status and data.
- Prevents batteries from over-charging and over-discharging.

BATTERY

Feature

- Sealing structure (anti-leakage), no leakage, no acid mist, no need to add acid and water during use;
- High efficiency gas absorption,
- sealing reaction efficiency is greater than 98%;
- Self-discharge rate is extremely low - long standing period;
- Deep cycle has a long service life;
- Wide operating temperature range.
- The front terminal is firm, safe, easy to install and easy to maintain;
- Standard installation design, narrow and high structure with good heat dissipation performance;
- Unique handle structure for easy handling and installation.

Solar energy storage is the application of 'battery' in solar photovoltaic power generation. The solar battery that is widely used at present is mainly lead-acid maintenance-free battery and gel battery. These two types of batteries are inherently “free” maintenance characteristics and environment. Less polluting features are ideal for reliable solar power systems. Good deep cycle ability, good overcharge and over discharge ability. Special process design and long life battery guaranteed by colloidal electrolyte. Suitable for different environmental requirements, such as high altitude high temperature, low temperature and other conditions can be used under normal conditions.

Model	MS-BT-100	
Battery voltage	12V	
Battery capacity	100Ah	
Size	407*173*210mm	
Gross Weight :	29KG	
Service life	6 years(25℃)	10 years(20℃)
Recycling Voltage	-15~45℃	

Cable Accessories

MARS-SOLAR offers everything to connect the solar range, Including solar connector, solar cable and solar tools. With these cable accessories, you can connect the solar range easily.

Cables

MS-C-ATA-1.5
1.5m Anderson to Anderson Cable

MS-C-ATA-5
5m Anderson to Anderson Cable

MS-C-ATA-10
10m Anderson to Anderson Cable

MS-C-RTP-5
5m Regulator to Panel Cable

MS-C-RTP-10
10m Regulator to Panel Cable

Battery cables for permanent or portable setups

MS-C-ATC-1.5
1.5m Anderson to Battery Clip Cable

MS-C-ATE-1.5
1.5m Anderson to Battery Eyelet Terminal

MS-C-RTB-1.5
1.5m Regulator to Battery Cable

Multi-panel set-ups Cable

MS-C-MP-Y
Positive and Negative MC4
Y Adapters

MS-C-MP-3Y
Positive and Negative MC4
3Y Adapters

MS-C-MP-4Y
Positive and Negative MC4
4Y Adapters

MS-C-APC-0.3
0.3m Anderson Parallel Cable

MS-C-ASC-0.3
0.3m Anderson Series Cable

Connector cables

MS-C-MTA
MC4 to Anderson Connector Cable

MS-C-PRC
Portable Solar Regulator Cable Kit

MS-C-ATBW-1.5
1.5m Anderson to Bare Wire Cable

MS-C-STA-7.5
7.5m SAE to Anderson Solar Blanket Cable

Solar PV Tools Kits

Features :

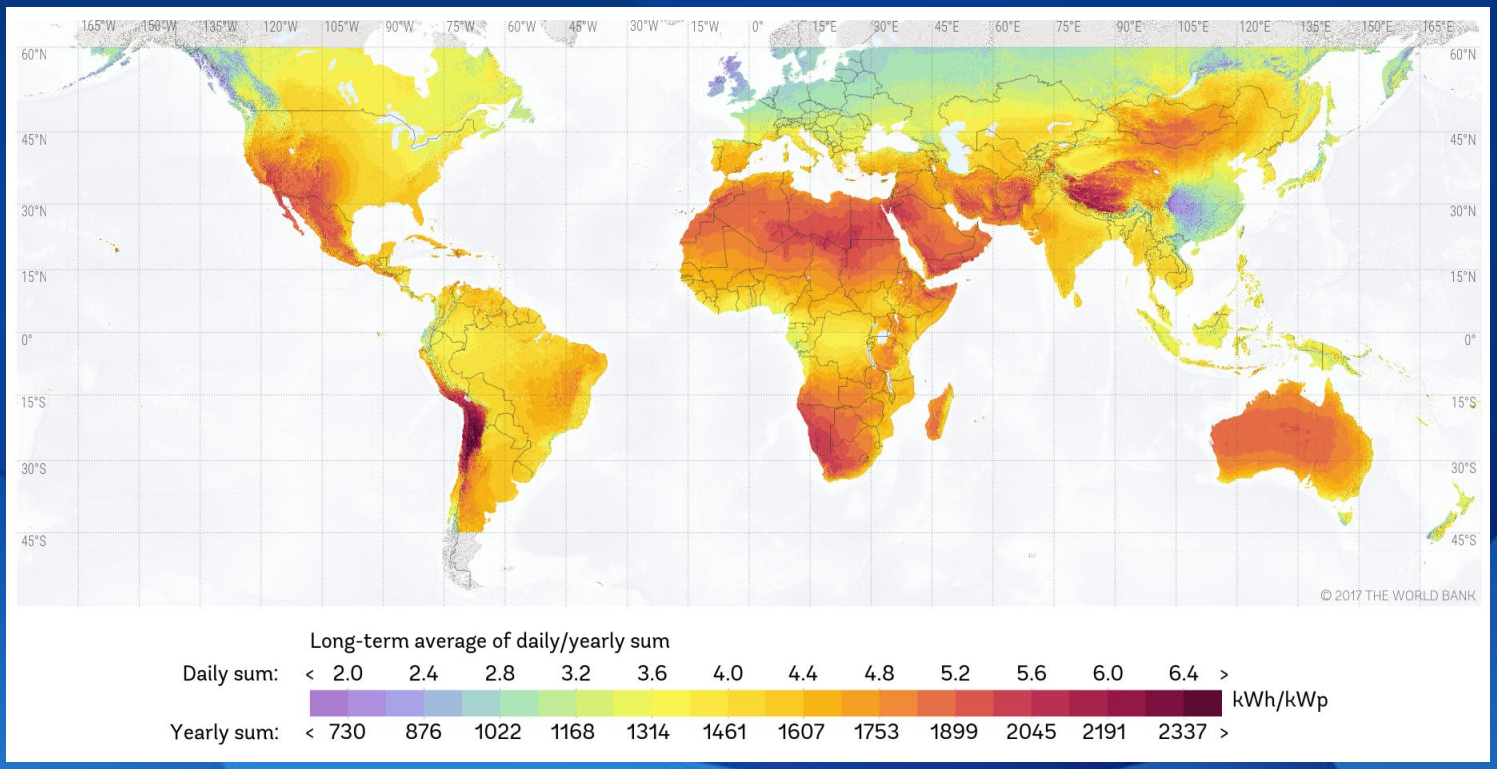
* Interchangeable high-precision crimping die set;
* 1.2 metric tons pressure at crimping face, with minimal hand effort;
* Solar Crimping Tool is High precision ratchet mechanism for complete crimps

Package Included:

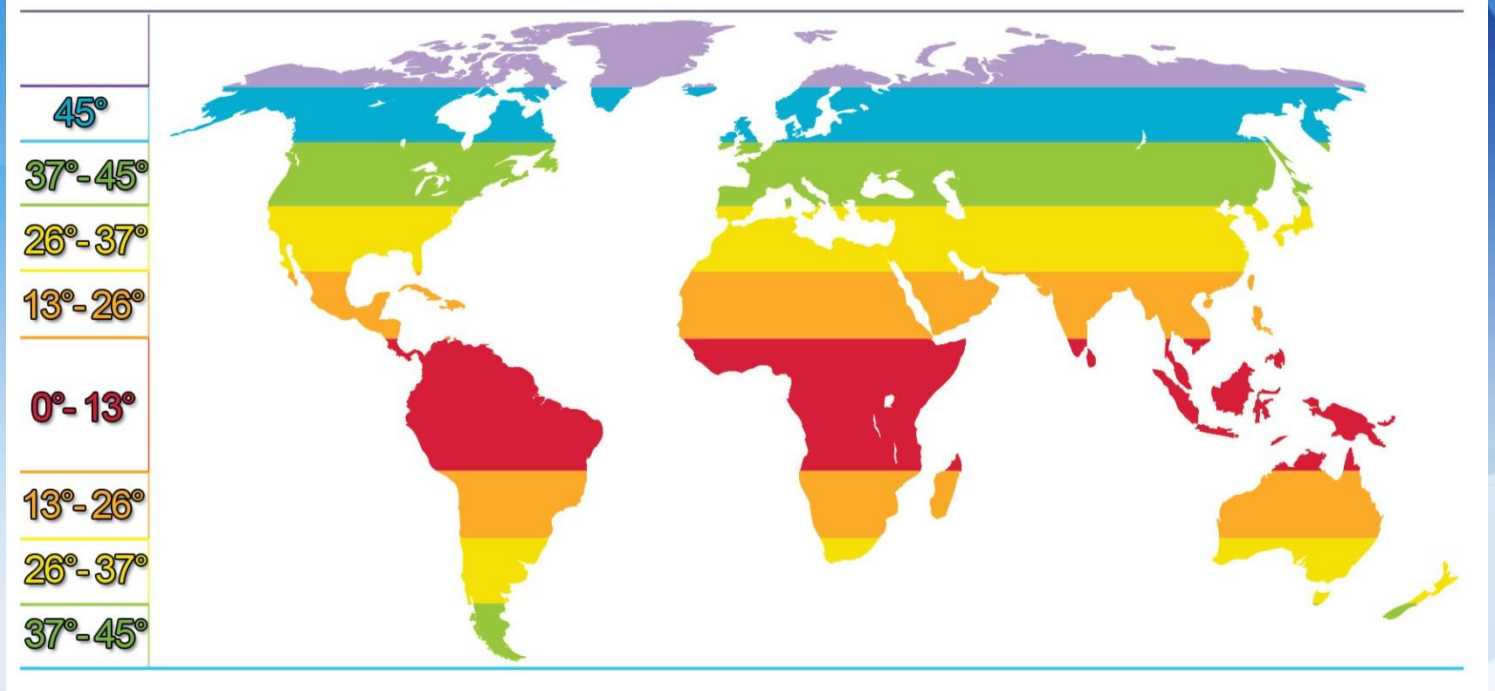
1 Pair MC4 Connector
1 PCS MC4 Crimping Tools
1 PCS Wire Stripper with Cutter
1 Pair Solar Spanner

SOLAR RESOURCE MAP

Photovoltaic Power Potential



Optimal Angle for Fixed Solar Panels Depending on Installation Position



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