

S4a

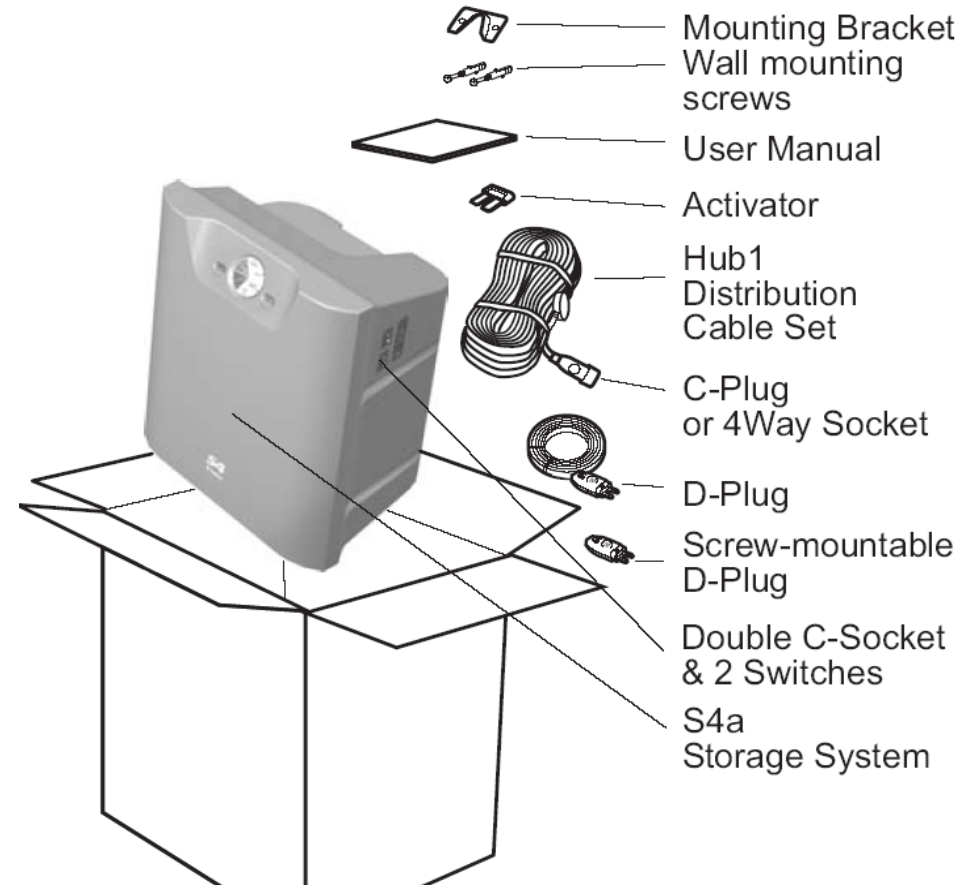
 **Sundaya**

User Manual

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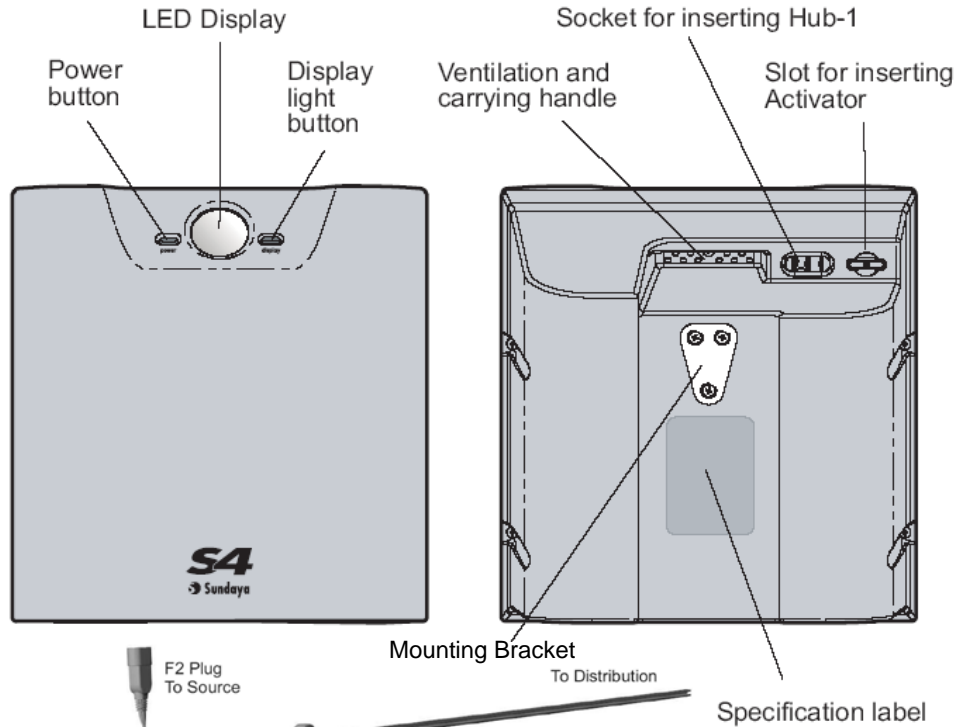
Out Of The Box



Warning: Please read this manual carefully before use and installation of the system.

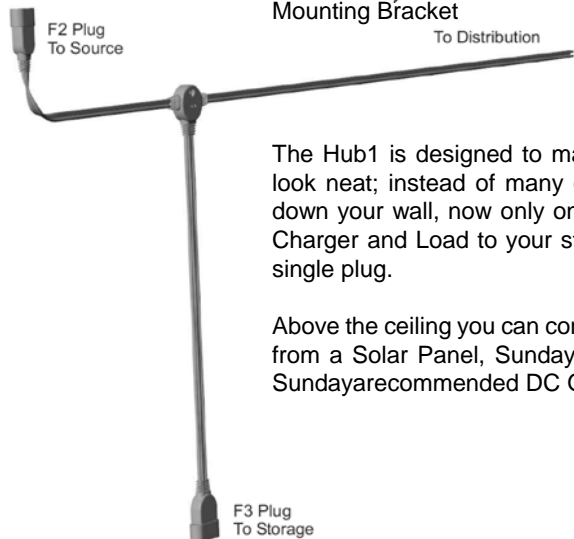
Item Descriptions

The S4a (Sundaya Smart Storage System analog) is a plug and play wall mountable sealed lead acid storage system with a state of the art micro-processor based smart energy management system. The unit has a clear LED display that displays battery state of charge and charge/discharge or rest mode. The unit is also equipped with an alarm to warn user when battery is 1 hour to forced disconnect.



The Hub1 is designed to make the DC installation look neat; instead of many cables running up and down your wall, now only one cable connects both Charger and Load to your storage system, using a single plug.

Above the ceiling you can connect the source (either from a Solar Panel, Sundaya's DC10 or any other Sundayarecommended DC Generating Source)



Installation

The installation of S4a consist of the following steps:

1. Selection of suitable location
2. Installation of wall mounting bracket
3. Installation of Hub 1 cabling system
4. Starting up the system

Step 1 : Selection of suitable location.

With DC low voltage systems it is important to locate the Storage System close to the appliance that consumes most power.

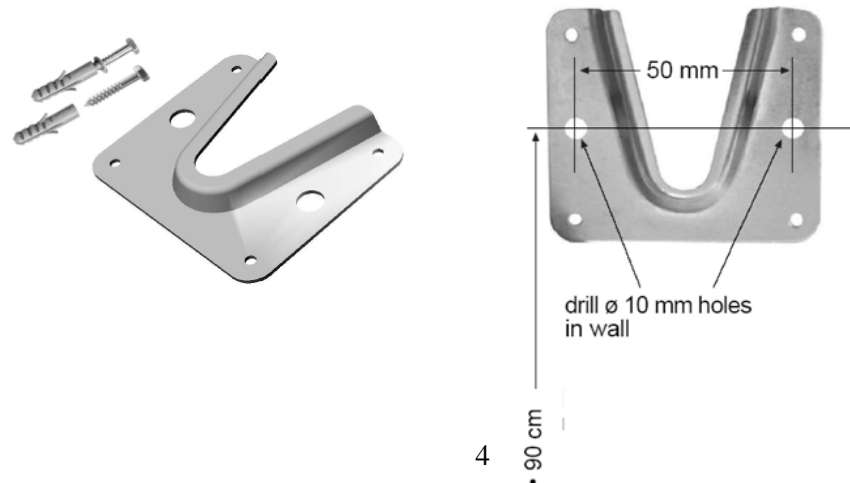
If you for example intend to use your S4a for powering lights and a computer or TV ; then the most power consuming loads will be the TV or computer , and thus the S4a must be located as near as possible to this appliance in order to prevent unnecessary voltage drop in long cables.

Step 2 : Installation of Wall Mounting Bracket.

The S4a can be either put on a table or mounted on a wall. In case you mount the unit on the wall it is important to make sure that the quality of the wall is strong enough to support the weight of the unit. In case you are not convinced about the wall strength then we recommend to use bolts that go all the way through the wall to mount the S4a Mounting Bracket.

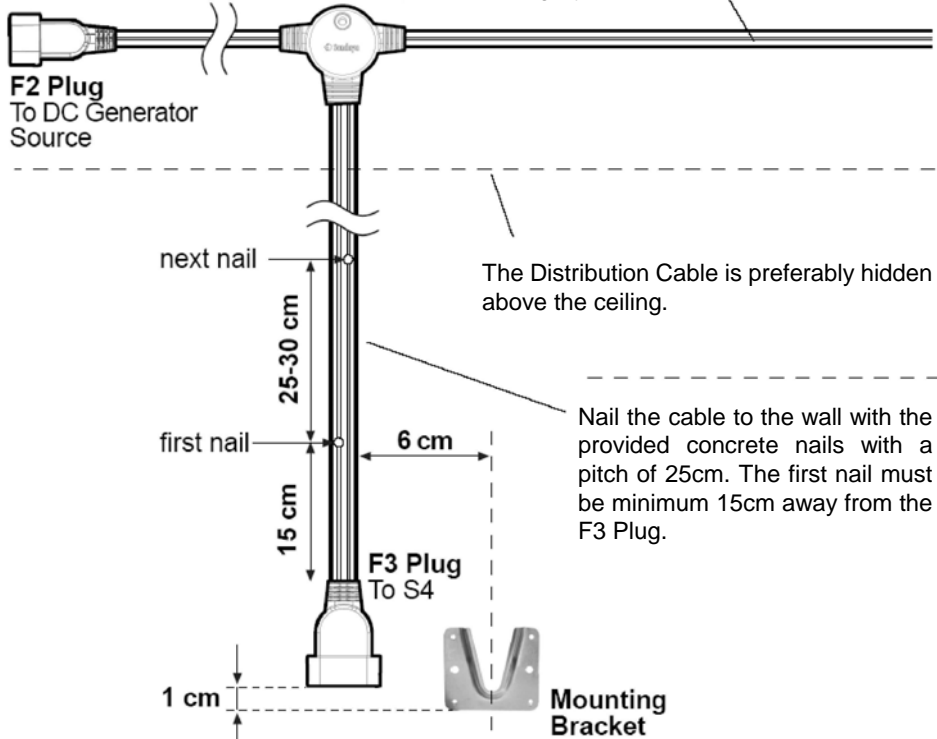


It is recommended to mount the S4a at least 90 cm from the floor level to keep it out of children's reach.



Step 3: Installation of Hub1 Cabling System.

For further instructions about the distribution system; please refer to the DCS Cabling System Manual.



Step 4: Starting up the System.

After the Cabling System and DC Generator Source have been installed; you can prepare the S4a to get connected. The first thing to do is to insert the activator in the back of the S4a.



When you insert the activator; the unit and the LED display will power up.



Hang the S4a into the wall bracket and plug the F2 plug into the socket on the back of the S4a.



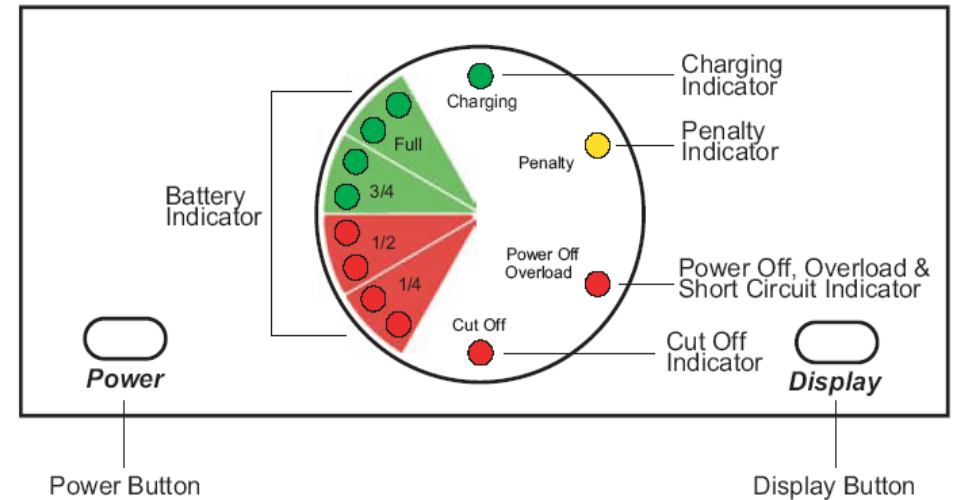
Starting up the System (continued).

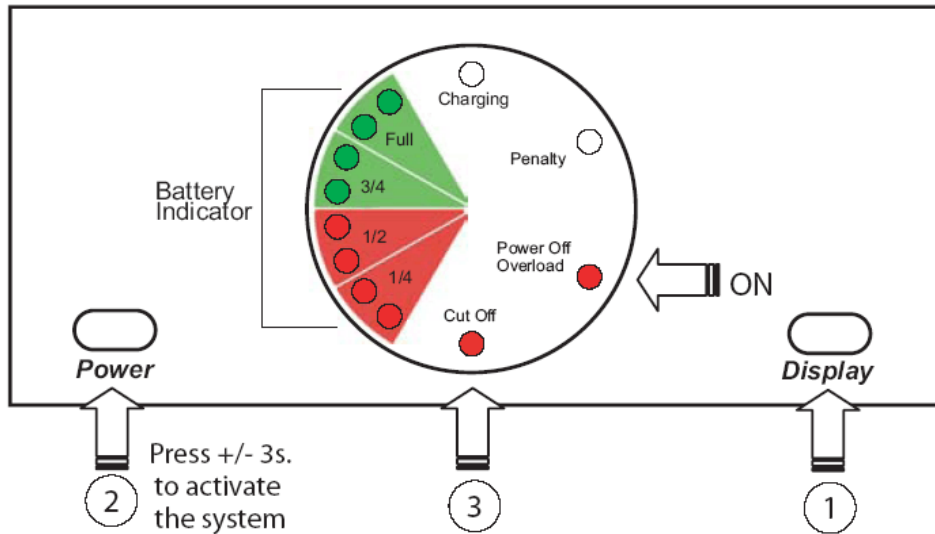
To activate system, press the Power switch 3 seconds and test if all lights and appliances are working



Operation

S4a Front Panel Display



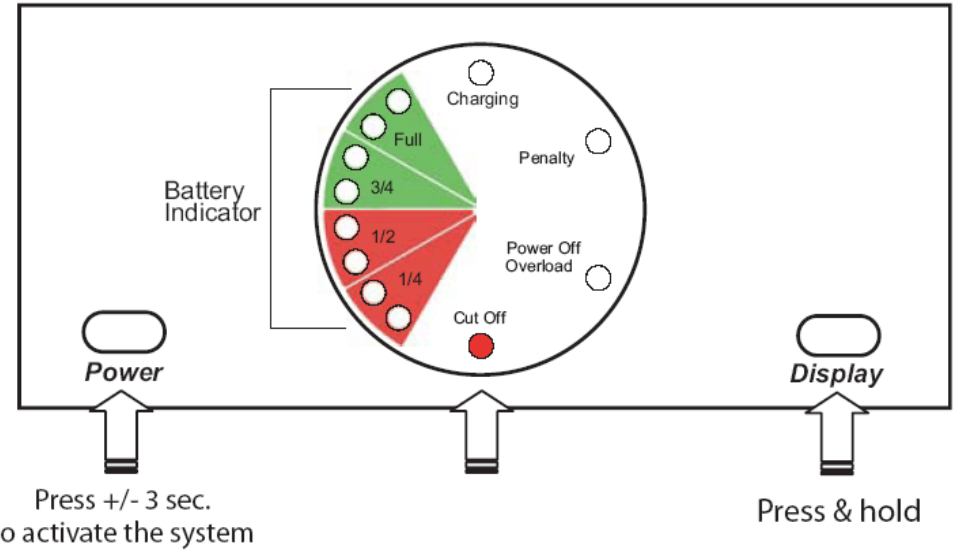
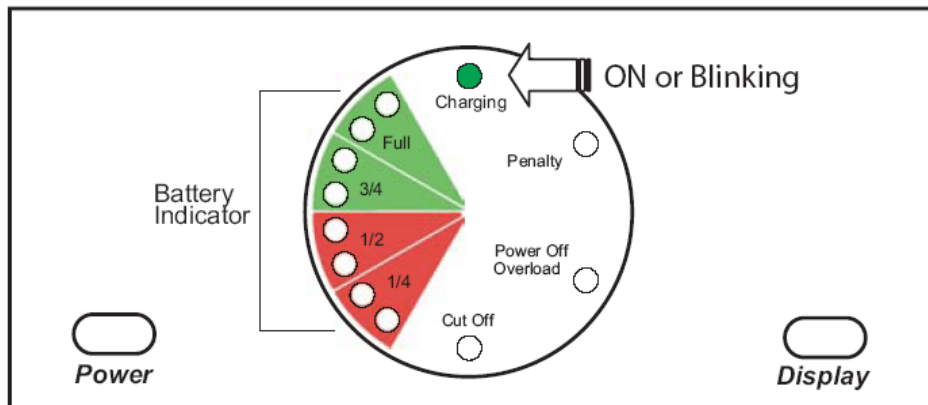


A. Manual operation :

1. **Press & hold** the "Display" button. See at Battery Indicator which indicates the position of battery condition.
2. If LED indicator at "Power off/Overload" turns **ON**, it means the system is inactivated. To activate it, press "Power" button for **3 seconds** with condition the battery has been charged in full.
3. If the battery is not fully charge, "Cut off" indicator turns **ON**. To activate the system, let the solar module charging the battery for **3 - 4days**. When the battery is fully charge, the system will automatically activate.

B. Charging Condition :

1. If charging indicator turns **ON**, meaning the system is in **charging condition**.
2. If the indicator is **blinking**, meaning the battery is in **Full condition**.

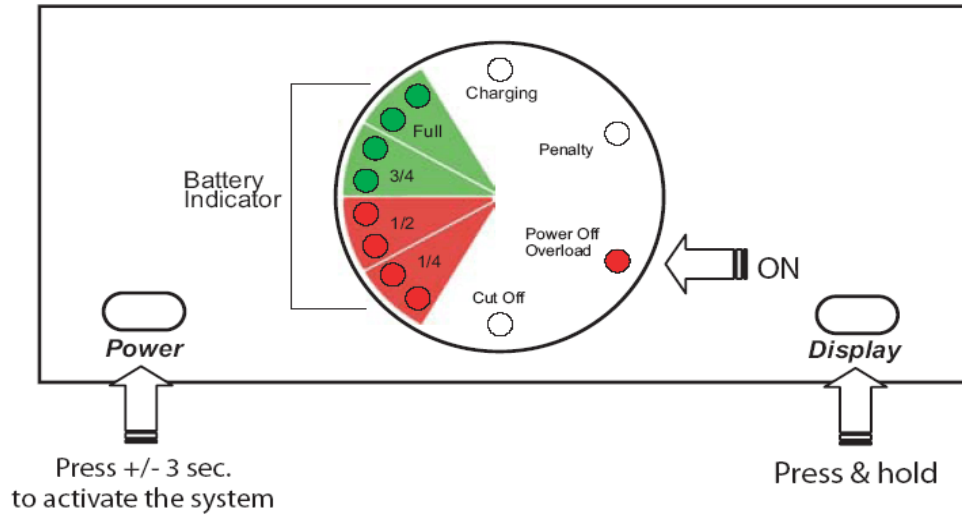


C. Cut Off Condition:

If system is being used overload before the battery bleed dry, S4a will give a warning in a form of **alarm sound** until the battery is dry.

To recognize the system in "Cut off" condition; when you press "Display" button, **battery indicator will not turns ON but "Cut off" indicator is being ON.**

To re-activate the system, let the solar module charging the battery for 3 - 4days. When the battery is fully charge, the system will automatically activate.



D. Short Circuit Condition:

If short circuit happens, S4a will automatically inactivate the system. To reactivate it, find the light/appliance/wire which caused event and fix it. After that press "Power" button for 3seconds, the system will be re-activated.

Maintenance & Repairs

The S4a is designed to be completely maintenance free, but of course it is recommended to regularly clean the S4a outer casing so that no dust or dirt builds up on the casing or display.

You can use a damp cloth for cleaning; DO NOT USE thinner or other solvents that can damage plastic surface.

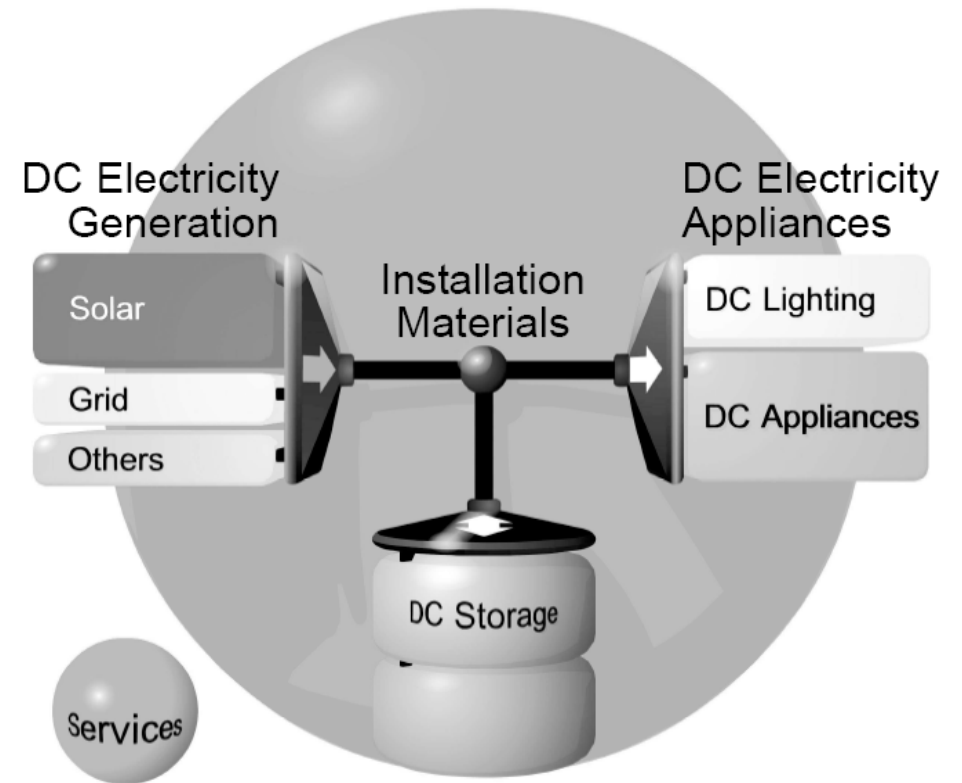
The S4a has noserviceable parts inside; in case electronics or battery have failed; spare parts are available for replacement.

The replacement can be done at Sundaya authorized service agents or by DIY; the instructions for replacement of parts are included with the spare parts.

In case of DIY the warranty seal will be broken and no further warrantee can be provided.

Sundaya Product Categories

The Sundaya System



Sundaya product categories are grouped as: System, Generator, Storage, Installation Materials, Lighting and Appliances. The overall categories are further supported by our Services.

As we have an integrated total solution comprising the different areas, the Sundaya System thus can provide you with the most efficient Decentralized Power solutions to your electrical needs.

DC Electricity Generation

PV Module

Our PV modules come precabled for easy Plug and Play with the rest of the Sundaya System components. All you need to do is plug the module cable to the Hub1 that comes with the S4.

The DC10 converts AC power from 150-270V AC to 12V DC, for charging the S4 or S3 and simultaneously powering the DC Appliances. When AC power is available, the Storage System will not be discharged. Only when AC power for whatever reason is not available, power is supplied by the Storage System.

DC10



DC Storage

Our futuristic, intelligent, portable and wall-mountable DC Storage.

It comes in a beautifully designed sealed casing, giving protection to its user, as well as complementary to the house interior.

Ideal for DC lighting, DC computers, DC audio equipment, DC televisions or any appliance that operates on 12V DC. Its controller is equipped with a custom microprocessor, constantly monitoring to protect the battery against overcharge, overdischarge and usage abuse, thanks to the FHITM algorithm in the microprocessor's program. It makes sure that once every ten days the battery gets a chance to recharge back to full capacity.

S4



The intuitive LCD at the front panel tells you the condition of the battery, whether it is charging, discharging, etc. A buzzer warning tells you if the battery is running low.

Installation Materials

PV Module Support Our sturdy and well constructed PV Module Support Structures makes mounting your PV Module on the rooftop an easy task.



To make a cross joint between cables, just sandwich them between two halves of a T-Con and then tighten the contact screws.

T-Con

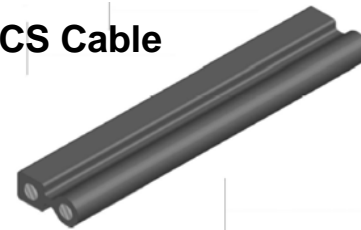


S-Con



The S-Con is like the T-Con, but used to connect a switch (Pull-On, wall switch, etc.) that will toggle the current flow to the opposite branch of the cross joint.

DCS Cable



Unlike AC, wiring on a DC system has polarity, positive-negative, and it is dangerous if you connect them in the wrong way. So we designed a special cable that has a unique cross section shape. Impossible to switch polarities.

Cables have to go through windows having this shape on all Sundaya fittings, to prevent inserting the cable in the wrong way.



This is a uniquely shaped pair of plugs for connecting your DC appliances.

Plug-C is from the supply side and Dplug is on the appliances end. Plug-C is available as the 4Way Socket extension cord.



DC Lighting

The first and most famous creation of Sundaya. Often copied but never rivalled. Introduced in 1994, this 12VDC light has now proven its reliability of more than 10 years. Millions installed in homes worldwide. Exists in 6W and 10W, producing an undistinguishably similar brightness of 210 lumen and 280 lumen respectively.

MultiLight



Waterproof lamp for outdoor heavy weather conditions. The double-U CFL tubes are housed in an assembly of unbreakable handle and polycarbonate cover, mounted together with strong nylon screw rings and rubber gaskets. Available in 5W, 7W and 10W, producing 175, 245 and 350 lumen brightness respectively.

Q-Light



Our top of the line high efficiency CFL with a lifetime of over 10,000 hours. Comes in a two-piece assembly allowing replacement of the triple-U tubes. The base has an integrated preheat inverter that helps extend lifetime and increase its brightness.

The brightness ranges from 120 lumen for the Q-Light 3, to 800 lumen for the Q-Light 18.



Ulite

Economical CFL lights with a lifetime above 8,000 hours. The Ulite has an integrated instant start inverter. Available in 3W, 6W and 9W, producing brightness of 120, 240 and 360 lumen respectively.

Lumi



Our small but beautiful 0.5W/2W incandescent lamp, ideal for bedroom or corridor night light. Consumes very little power. Available in 3 shades: red, purple and white.

E17 Light Fittings



Apollo

To prevent accidents in households where both 12VDC and 220VAC installations co-exists, Sundaya has developed a special DC standard armature range, with a fitting size that is in between the most common E27 and E14 AC standard. All Sundaya Lamp fittings are standardized for 12VDC using the E17 fitting.

The E17 range is unique because with only a few components and various shades you can build any lamp for any lighting purpose you require in your home, office or shop, on the ceiling wall or table.

Pointer



Tablo

Apollo



Extender



Halo Skirt



DC Appliances

DC Radio, VCD, CD and Cassette Player.

Music, movies and news, accessible to you for your enjoyment in areas without electricity. The DC VCD player and DC LCD TV will provide you hours of entertainment.



LCD TV

For home entertainment and as a window to the world. LCD TVs operate in 12V DC and allows low power consumption for long hours of viewing. These flat screen TVs do not take up much space in your home, caravan or shop.



DC Computing

You can make a quantum leap by using DC powered computers, or by installing the Sundaya ATX 12VDC internal power supply in your existing desktop computer. If you have power from the grid, you can combine power sources by putting a DC10 to charge your DC storage while powering your DC PC, so that when grid power is out, power will be automatically drawn from your S3 or S4, allowing you to continue working for many hours longer.



General Specifications

Product name: S4a (Sundaya Smart Storage System analog)
Product description: 12VDC Electricity Storage System with integrated smart electricity management electronics.

Electrical Specifications

Nominal System Voltage: 12 VDC
Charge Input Voltage Range : 13.5-14.5 VDC
Maximum Charge Current: 10 Amp
Load Output Voltage Range : 11.6-14.5 VDC
Maximum Load Current : 10 Amp
Available Storage Capacity: 200 up to 600 Watthours
Controller Efficiency: 98 %
Other functionality:
- Electronic overload / short circuit protection,
- Reverse polarity protection
Indicator model: LED Display Indicator
Power consumption (on/off): 0.1 A (max) / 0 A
Battery low Condition (0%): 11.60 V
Battery Full Condition (100%): 12.60 V
Indicator for Battery State of Charge: (0 - 100%)
LED Displays Indicator of Charge (8 steps) with push button Power switch and Display switch.
- Indicator for Charging mode condition
- Indicator for Penalty condition
- Indicator for Power Off, Short/Overload condition
- Indicator for battery cut-off condition
- Module Input and Load Output Female socket,
- Activator socket.
- Double C-Socket and Switches

Wiring & Sockets :

Mechanical Specifications

Enclosure Materials/Color: ABS/Grey
Gross weight (inc. Sundaya dry battery): 7.5 up to 17 kg (depending on capacity)
Product dimensions (LxWxH): 275 x 206 x 295 mm



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