

S4 Installation Manual



Introduction

Congratulations. You are now the proud owner of a fine Sundaya product. May you enjoy its usefulness for many years to come.

This manual will show you how to install the S4 to use with your Sundaya system.

The electronics and the software of the S4 has an unique *Forced Health Improvement*[®] (FHI) feature through which it is ensured that the battery gets a full charge at least once in 10 days, irrespective of how the battery is discharged. However, it must be ensured that the battery receives a minimum charge of 150 Watt-hours per day.

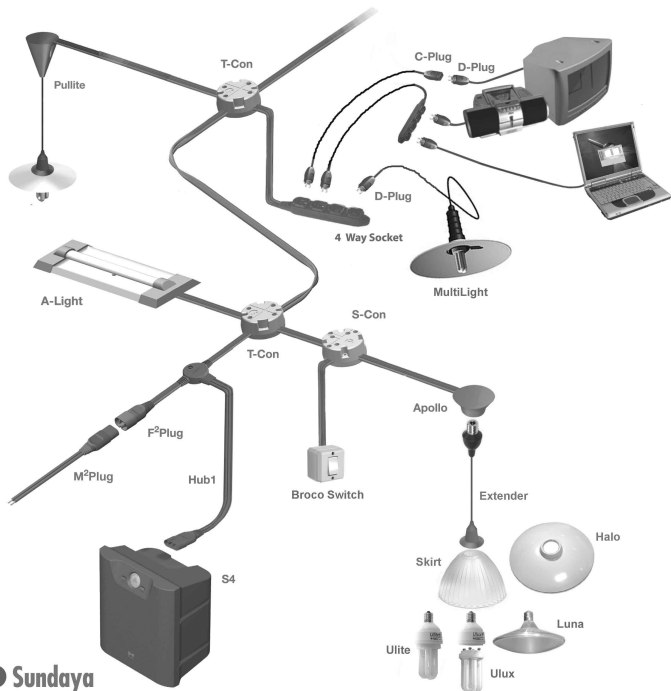
FHI keeps a record of history of the battery's State of Charge (SOC) daily in its memory. If an unfavorable discharge behavior is detected, the discharge disconnect level is gradually adjusted to higher levels. This will ensure that the battery can reach a full charge at least once in 10 days. The displayed SOC will be different from real SOC by the FHI points. The FHI points depend on the history of user pattern of charge and discharge.

Please read carefully this manual thoroughly before starting the installation. Familiarize yourself with all the parts supplied. Then, follow each step of the instructions carefully and correctly. Any Sundaya product is designed to be easily installed without the use of sophisticated tools, other than those provided in your package.

Sundaya

The Sundaya System overview

A sample installation showing the Plug & Play concept:



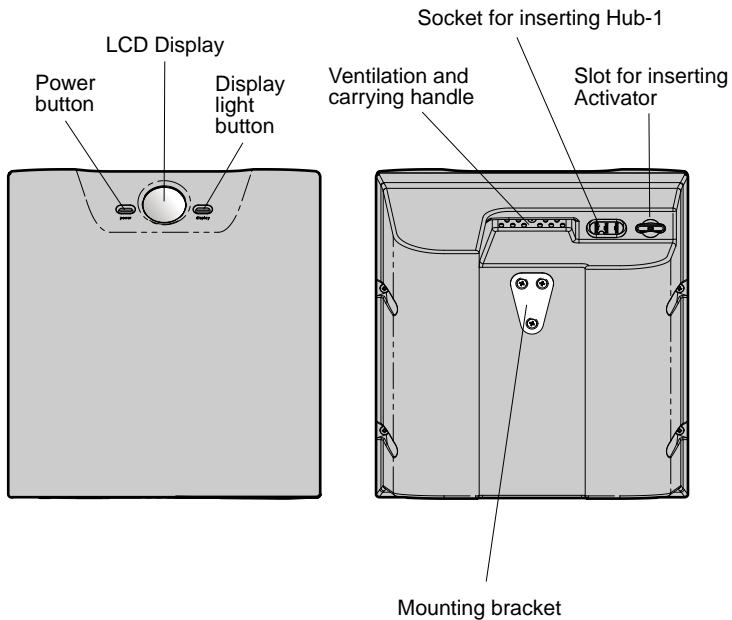
S4 Set

Before you install the S4, familiarize yourself with the contents of the package delivered:



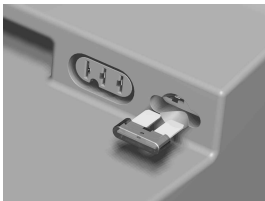
1. S4
2. Activator
3. Wall bracket
4. two screws and fixings
5. Hub-1 cable
6. Warranty

S4 overview



Installing the S4

1



Prepare the S4, installation equipment and installation material provided.

Insert the Activator in the slot behind the S4. It takes about 1 hour to get an accurate reading of the battery charge condition on the LCD.

2



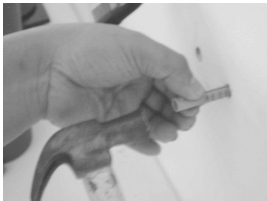
Determine the sturdy wall for installation. Place the bracket against the wall and mark the positions of the bracket's two holes.

3



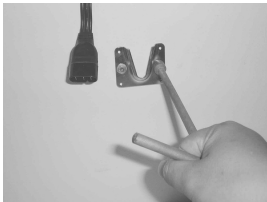
Drill the holes at the marked spots, or if the wall is made of wood, punch holes with a nail whose diameter is slightly smaller than the screws.

4



Insert the fischer fixing into each hole in the wall. If the wall is made of wood, fixing is not needed.

5



Attach the bracket to the wall using screws provided.

6



Hang the S4 unit on the wall bracket.

7



Plug in the F3 plug of the Hub1 cable provided, to the M3 socket at the back of the S4.

8



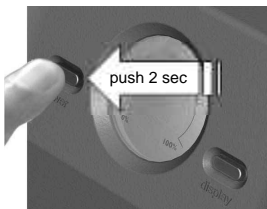
If you use a Sunda DC10, plug in the F2 Plug of the Hub1 cable to the rightmost socket underneath the DC10. Or, if you use a Sunda PV Module, connect the F2 Plug of the Hub1 to the M2 Plug of the cable module.

9



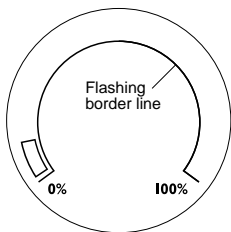
The S4 installation is complete.

Operating the S4



After installation, verify everything is correct. The system can be operated by pushing the Power button for about 2 seconds.

Observe the S4 LCD display. If you see...



Flashing border: insufficient voltage. S4 cannot deliver power.

Border as solid line: sufficient voltage. S4 can supply power.

Display is off, you hear the buzzer, and red light on Power button is lit: overload/short circuit.

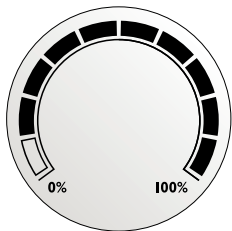
In this case, reduce load, or switch off some appliances. Then reset again by pushing the Power button for 2 seconds.

If problem disappears and power is back on, then it was caused by overload.

If problem persists, then there is a short circuit somewhere. Check the entire installation.

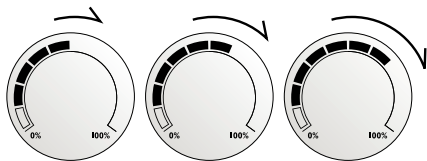
After inserting the Activator, the LCD will show the battery condition at 0%. After a while, this level may be displayed with higher values. The S4 needs about an hour to accurately measure and display the actual level of charge.

Each bar on the LCD represents 10% of battery charge.



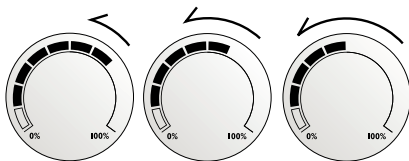
All bars displayed: fully charged battery.

1



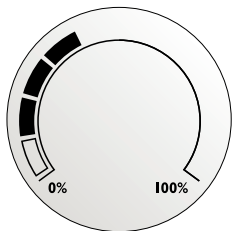
*Bars advancing:
charging battery, with
current greater than
0.3A.*

2



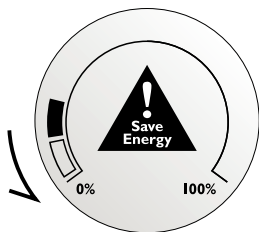
*Bars receding:
discharging or using up
battery, with current
greater than 0.3A.*

3



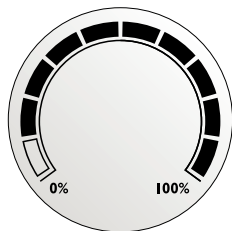
Bars unmoving:
Charging and discharging is at the same level, at around 0.3A.

4



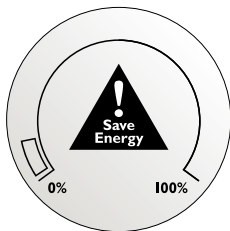
Buzzer beeps 3 times every 5 minutes, bars at 20%, "Save Energy" appears and power still on:
Battery low warning. You should turn off power and allow battery to recharge.

5



Bars reach 100% and "Save Energy" then disappears:
Battery is fully recharged.

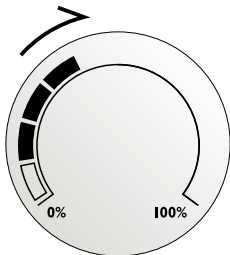
6



“Save Energy” still displayed, S4 is used down to 10%:

Power will soon be cut off. The buzzer warning will sound for about 5 minutes, after which cut off is imminent. By the mean time, you could try reducing the load, or turn load off completely and wait until battery has recharged.

7



After cut off and reducing the load, you may try turning the S4 power on again. Depending on the load, sometimes you may still get less than an hour's worth of power left in the battery.

If you get a second cut off, you may not be able to turn on the power of your S4 again until the battery has recharged to at least 40%.

8



The word “Service” appears all the time, even after resetting:

The S4 requires our technician's attention. This could be due to a faulty or old battery.

Troubleshooting

Symptoms

Diagnosis

Remedy

Load (lights/ TV/
radio) remains off

S4 not yet on

Push Power button for 2 seconds.

Faulty installation

Verify cable installation and all junctions, such as T-Cons.

Reverse polarity

Verify all polarities at connections.

Short circuit

Verify installation. Turn load on individually to find the culprit.

S4 delivers power
for only a short
while

*Battery not fully
charged*

Turn off load. Allow battery to fully recharge.

*Battery damaged
or nearing its
maximum lifetime*

Check the casing's temperature. Excessive heat may signify damage. Check also battery voltage: below 11 VDC and/or voltage drops rapidly signify battery damage.

Excessive use

Reduce load. Turn on load selectively based on necessity.

*Initial charging
not optimum*

Turn off load. Allow battery to fully recharge.

Symptoms	Diagnosis	Remedy
Battery does not retain charge	<i>Battery damaged or dead</i>	Replace battery at the nearest service center or authorized dealer.
	<i>Faulty S4 controller</i>	Bring S4 unit to the nearest service center or authorized dealer.
“Service” warning appears	<i>Battery may be damaged or nearing its maximum lifetime</i>	Replace battery at the nearest service center or authorized dealer. To clear the “Service” warning, turn off the S4, remove temporarily and reinsert the Activator. If battery holds at least 10% charge, you can use the S4 unit again.

Safety Aspects

Since the unit is equipped with a sealed lead acid battery the unit should be transported/installed taking into account the safety measures normally applicable to sealed lead acid batteries.

The uniqueness of the S4-electronics is that the FHI feature will protect against battery abuse by the user. No such thing as “User training” needed anymore because the battery simply cannot be abused, unless of course by physical abuse (breaking open the container and tap the battery directly). In this case however you will break the seal and warranty will be void.

General Specifications

Product name	: S4 (Sundaya Smart Storage System)
Product Type	: S4 480 S4 660
Product description	: 12VDC Electricity Storage System with integrated smart electricity management electronics.

Electrical Specifications

S4 Type	: S4 480	S4 660
Nominal System Voltage	: 12 VDC	12 VDC
Charge Input Voltage Range	: 13.5-14.5 VDC	13.5-14.5 VDC
Maximum Charge Current	: 10 Amp	10 Amp
Load Output Voltage Range	: 11.5-14.5 VDC	11.5-14.5 VDC
Maximum Load Current	: 10 Amp	10 Amp
Maximum Storage Capacity	: 480 Watthours	660 Watthours

Mechanical Specifications

Enclosure Materials	: ABS	ABS
Standard battery	: 40 Ah	55 Ah
Nett generator weight (w/o battery)	: 1.24 kg	1.24 kg
Gross weight (inc. Sundaya dry battery)	: 17 kg	19 kg
Gross weight (with box)	: 19kg	21 kg
Product dimensions (LxWxH)	: 275 x 206 x 295 mm	
Packaging Dimensions (LxWxH)	: 280 x 210 x 360 mm	
Volume / Pcs. per m3	: 0.021m3 / 47.6 pcs. per m ³	

Note:

The products and materials depicted in the photos are for the Manual's illustration purposes only. As product design is subject to constant improvement, actual product may vary.

Sundaya International Pte Ltd

11 Tampines street 92, Singapore 528872, Singapore
Tel : (+65) 6788-8345, Fax : (+65) 6788-8749
email: info@sundaya.com

PT Sundaya Indonesia

Jl. Pondok Randu No. 38, Duri Kosambi, Cengkareng 11750,
Jakarta Barat, Indonesia
Tel : (+62) (21) 541-6103, 541-6104, 541-6105, Fax : (+62) (21) 541-6106
email: info@sundaya.com

Sundaya Lanka (Pvt) Ltd

6B Agaradaguru Mawatha, Ekala 11380, Ja-Ela, Sri Lanka
Tel : (+94) (11) 222-9574, Fax : (+94) (11) 223-2769
email: info.lk@sundaya.com