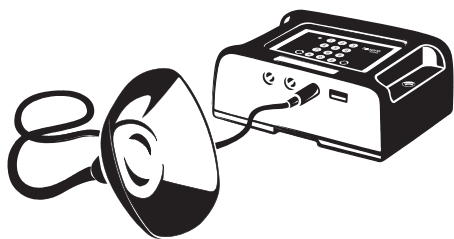


fosera SPARK

User Manual



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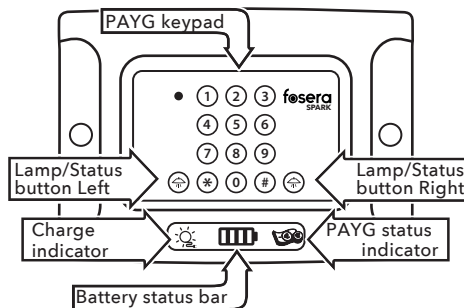
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Overview

The fosera SPARK comes dimmable lamps which can be adjusted between eco, medium and full level by pushing the SPARK Lamp/Status button for the 2 LAMP mini configurations or by pressing the LAMP mini touch switch for the 3 LAMP mini configurations. For the 3 LAMP mini configuration, the SPARK Lamp/Status button shows the state of the system (charge, battery and PAYG status).



PAYG

To top up credit enter the keycode over the keypad. To get information about the status of your PAYG, press the SPARK Lamp/Status button.

- Green light : More than 2 days of credit left.
- Orange light : 1 hour to 2 days of credit left.
- Orange & red blinking light : Less than 1 hour of credit left.
- Red light : No more credit. Please top up.

Solar charge indication

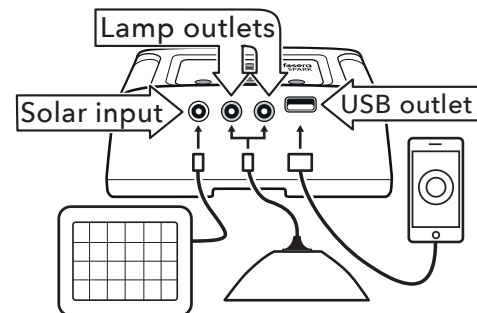
By pressing the Lamp/Status button the system will show the solar charge level:

- Green light : High charging power
- Orange light : Medium charging power
- Red light : Low charging power

! Note: in the mornings, evenings and shady or bad weather conditions the indicator could be orange or red. If it is a bright sunny day and the indicator lights orange or red, it could indicate that shading is occurring on the solar panel.

Additional power

USB charging is possible through one USB port. The USB port automatically turns on if the system is operating. During low power operation USB charging is disabled.



Battery state of charge

When either of the SPARK Lamp/Status buttons are pressed the battery status bar and the PAYG status bar indicator lights up.



100%



50%



75%



25%

Energy saving mode:



Energy saving mode ensures that even if the battery is getting low, some charge is still left over for lighting. When the system is in energy saving mode, the USB is turned off. The energy saving mode is indicated by one blinking green bar.

SPARK Protections



The fosera SPARK is protected against short circuit and over current.

If an error occurs, all the LED's will blink.
Please disconnect all appliances and solar panel.

Installation

1 Place the solar panel in direction of the sun for maximum performance.



- Avoid any shading of the panel.
- The angle should be at least 15 degrees to ensure that the rain can wash dirt from the panel.
- Make sure that the solar panel is securely mounted to withstand heavy winds and storms.
- Clean the panel regularly.

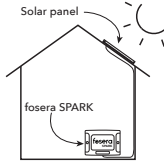
2 Mount the fosera SPARK on the wall. **Indoor use only!**

3 Place the lamp at your desired location. Make sure the cable is not pulled too tightly. If you need to extend the cable please use a cable provided by fosera.

4 Connect the solar panel to the yellow socket of the fosera SPARK system. As soon as the solar panel is connected a light will indicate that the battery is charging.

To connect two lamps, simply plug the lamps into the Lamp outlets.

To connect three lamps, one lamp in one Lamp outlet and the Y splitter cable in the other. Then, connect the remaining two lamps to the outputs of the Y splitter cable.



fosera appliances are designed to last a long time and are extremely efficient. They can therefore be used for many hours every day.

fosera appliances can operate at any voltage of the system and in a wide range of temperatures.

All appliances are designed for indoor use with the exception of the solar panel.

Protect them from rain and direct sunlight.

Trouble?



If the fosera SPARK does not work as it should, you can try resetting it.

To do this, first disconnect all appliances and solar panel and press both Lamp/Status buttons for at least 20 seconds. The system will display an LED that will scroll from left to right across the battery status bar to show that it has been successfully reset.

IMPORTANT NOTE: By resetting the system, you can lose some minutes of PAYG credit. Therefore, fosera does not recommend resetting the system unless strictly necessary.

Specifications

	SPARK 10	SPARK 20	SPARK 30	
Battery voltage	3.2 V			
Battery capacity	3.8 Ah	7.6 Ah	11.4 Ah	
Battery type	LiFePO4			
Charge controller	Overcharge, deep discharge and over current protection			
Battery indicator	4 stage battery charge indication			
Low energy mode	Automatically switches off the USB when the battery is low			
Solar charge indicator	The state of charging current from the solar panel is indicated by red, orange and green light			
Solar panel specs	Max. power	4 Wp	6 Wp	10 Wp
	Voc	6.23 V	5.40 V	6.18 V
	Isc	0.83 A	1.46 A	1.99 A
LAMP Specs	LAMP mini 100	0.76 W high efficiency LED lamp with 100 lm on full level		
	LAMP mini 150	1.14 W high efficiency LED lamp with 150 lm on full level		

Security advice/ maintenance

- Clean the solar panel from time to time to ensure proper power output.
- Keep all fosera products in a safe place and make sure the panel is installed securely, so it can not fall down.
- Keep the battery box and the appliances clean.
- The ideal temperature for the functional capability of all fosera products is between 0°Celsius and 50°Celsius.
- Protect the battery box from rain, dust and direct sunlight. Indoor use only.
- Do not expose the system to any liquids or rain.
- Do not open or repair any component of the solar system by yourself. This should be only done by an authorized technician. Otherwise the warranty will be void.
- If the cables are damaged, make sure that they are repaired or replaced. Do not use defective or homemade cables.
- Do not use loads and appliances that are not designed or certified for the system by fosera (except for the USB port).
- Only use the provided panels to charge the battery. Other panels or chargers will harm the system and therefore result in a loss of warranty.
- Keep the system, appliances and components away from fire.
- The battery contains a high amount of electrical energy. All short circuits must be prevented.

Runtime

	SPARK 10		SPARK 20		SPARK 30	
LAMP	100	150	100	150	100	150
2 LAMP mini configuration						
Solar runtime (h)*	6:30	4:20	11:20	7:30	16:15	10:50
Battery runtime (h)*	7:10	4:45	14:25	9:35	21:35	14:25
3 LAMP mini configuration						
Solar runtime (h)*	4:20	2:55	7:30	5:00	10:50	7:15
Battery runtime (h)*	4:45	3:10	9:35	6:25	14:25	9:35

*Mobile charging may reduce the runtime of fosera SPARK

Recycling information

Do not throw any of the components or the controller box into the regular trash when discarding. Please recycle to help minimize pollution and to protect the global environment. All fosera components used for manufacturing the system are recyclable. For more information on the Waste from Electrical and Electronics Equipment (WEEE) regulations, please visit the following webpage:

http://ec.europa.eu/commission/index_en

Warranty

We trust in the quality of our products.

All fosera battery boxes, lighting products and PV modules come with 3 years warranty. During this period we guarantee that our products are free from defects in material or workmanship.

Please contact your dealer or local fosera sales agent if you experience any problems with the product. Your local dealer will then assess the defect and decide whether the product can be repaired or has to be replaced.

fosera is not responsible for any consequential damage or damage that exceeds the value of the product. A warranty repair does not extend the warranty period. Appliances, like radio, TV, PAYG remote or fans are not included in the overall fosera warranty for electronic components and may have different warranty terms. The warranty becomes invalid if the device is used other than intended by the manufacturer. This warranty does not cover failures caused by incorrect installation, set up or unusual use. The warranty is also void in case of repairs by any unauthorized or untrained person.

For support please contact your local retailer or our headquarters via warranty@fosera.com. Please enter the name and, if possible, the serial number of the product and the date of purchase.