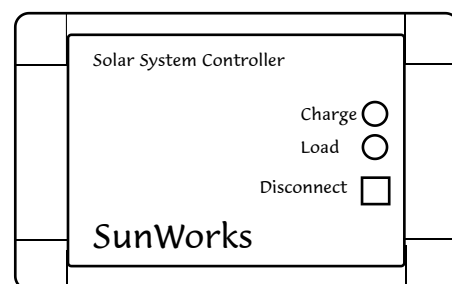
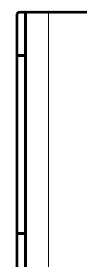
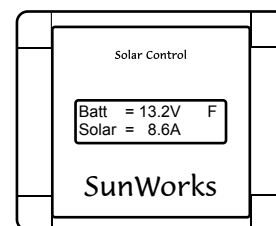


Operating Voltage	6.5 to 17	Volts (12V nominal)
Solar Current	25	Amps max
Load Current	15	Amps max
Battery types	Gel and liquid	Lead acid
Dimensions	145w123h45d	mm
Weight	420	g
Display	Yellow LED	Flashes when charging ON when charged.
	Green LED	ON with load
Controls	Push button	Load ON/OFF
Charge modes	Boost	For 2hrs or until battery reaches 14.4V. Boost mode recommences if battery falls below 12.4V, or if solar current falls to zero.
	PWM	14.4V. Boost and PWM for 2hrs max
	Float	13.8V continuous
Other modes	No solar	Night-time or too dark.
	Overcurrent	Max current exceeded. Charging stops for 2hrs
	Error	Battery faulty
	Cooling	Excessive heat. Waiting for lower temp.
Load disconnect	11.1	Volts
Load reconnect	12.5	Volts
PWM frequency	30	Hz
Self consumption	5.5	mA
Energy Loss at full current	< 6	Watts
Maximum solar voltage	35	Volts
Regulation type	Series	
Operating temperature	-10 to +50	Deg Celsius
Storage temperature	-20 to +60	Deg Celsius
Humidity	5 to 95	%
Case Material	Recyclable plastic, black.	
Protection	IP22	
Connection type	Ring terminals, standard automotive.	
Wire type	Up to 6	Sq mm. multi-strand
Wire length, battery	2	meters, Max
Wire length, solar panel	10	meters, Max
Fixing	Wall mounted. Fixed with two screws	

High specification Solar Charge Controller for Industrial and off-grid applications. Essential protection from battery overcharging. Automatic load disconnect. RS232 Data output. Heatsink not in contact with mounting surface, very low heat dissipation. LED Charge Status indicator. LED Load Status indicator. Push button, manual load disconnect. Optional remote display unit. Fully automatic operation. No setting up routine. High reliability. Small size. Ring terminals for secure cable connections.



Remote Display unit (optional). Supplied with 4m cable.



Cable enters from the back, allowing wiring to be hidden inside a cupboard or wardrobe, or behind a bulkhead.

SunWorks  
1, Place de l'Eglise  
17160 Louzignac  
France

Tel: 00 33 546 58 66 17  
Email:sales@sunworks.co.uk  
www.sunworks.co.uk

## SB4I Photovoltaic Charge Controller

For 12 Volt systems. 25amps max.  
Installation and Operating Instructions

# SunWorks

### OPERATION:

The SB4I is fully automatic in operation and requires no setting-up procedure. The charge mode is automatically selected to maximise the charge according to the charge state of the battery.

The yellow LED will flash when the controller is charging regardless of the charge mode. When the battery is charged, the yellow LED will remain ON.

If fitted, the Remote Display Unit (optional) shows the battery voltage, the solar current and the charge mode. The green LED will be ON when the load is connected.

The push button can be used to over-ride the automatic load-disconnect system.

Note that the solar current is automatically adjusted by the charge controller in accordance with the charge mode, and so will not always use the maximum current available from the solar panel, e.g. if the charge controller is in FLOAT mode, the battery is fully charged so the controller will only allow a small maintenance current through to the battery. The charge modes are as follows:

- N NO solar current is available for charging.
- B BOOST mode. Used at the start of each day or if the battery voltage falls below 12.4V.
- P PWM mode. Takes over from Boost mode when the battery voltage reaches 14.4V. Progressively reduces the solar current to maintain this voltage. For a maximum of 2 hours.
- F FLOAT. Maintenance charge. Solar current controlled to maintain the battery voltage at 13.8V.
- M MAXCURRENT. The solar panels are producing too much current for this controller. The current will be switched off for 2 hours.
- C Cooling. Charging stopped. Charging will recommence when the temperature has reduced.

### GUARANTEE:

This product is guaranteed against faulty materials or workmanship for 2 years from the date of purchase. This does not affect your statutory rights.

Please return the unit, together with proof of purchase to:

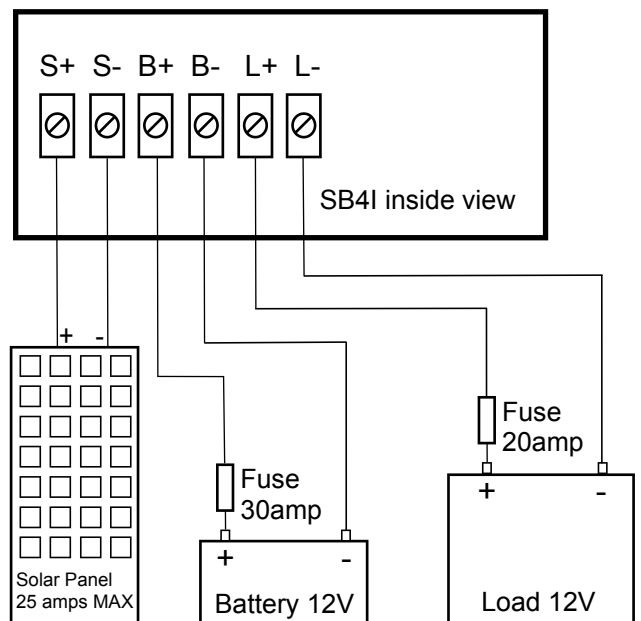
**SunWorks**

1 Place de l'Eglise  
17160 Louzignac  
France  
Tel: 00 33 546 58 66 17  
Email: sales@sunworks.co.uk

### INSTALLATION:

1. Please read through all the instructions before commencing installation.
2. The controller must be mounted in a well ventilated area. Position the controller on a vertical, solid, dry, non-flammable surface. The battery cables must not exceed 2m in length and must run directly to the battery. The cables to the solar panels can be longer but must run directly to the solar panels. Note that there can be no external common ground connections between battery, load or solar panels. Ensure that there is at least 150mm of clear space all around the controller, as the controller can get warm. Fixing is by two holes through the back of the controller. The cables attach to the internal connection points using standard automotive crimped ring terminals.
3. Holding the base of the unit in place, mark the position of the two fixing holes. Drill two 2.5mm holes for the fixing screws. Attach the controller using two suitable screws.
4. Cables between the solar panel, battery, load and controller must be 4mm sq. multi-stranded, and must be supported at intervals of 300mm. Fuses must be fitted in the battery and load positive cables. Before connecting the controller, cover the solar panel and remove the fuses. Use appropriate automotive crimped ring terminals to attach the cables. If in doubt please consult a qualified electrician.
5. When replacing the lid ensure that the cables pass through the slot in the case and that no cables are trapped.
6. Fit the battery fuse, and uncover the solar panel.

### CONNECTIONS:



### DISCONNECTION:

Cover the solar panels and remove the battery fuse before disconnecting the charge controller.