

# **SATS**

## **Solar Array Transfer Switch**

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User Manual

Latronics products are all proudly designed, engineered and manufactured in Australia. As a specialist power electronics company we produce products for a diverse range of applications such as mining, railways, telecommunications, marine, remote power, motor homes, and other industrial or commercial installations.

In order to produce highly reliable products, Latronics products have been designed to endure the most rugged terrain and the harshest conditions across the Australian continent. All products are engineered using the latest high quality components and manufactured to stringent quality standards, so that all Latronics customers enjoy many years of trouble free operation. It is important to us at Latronics, that our clients enjoy the maximum benefits from our devices, in a safe and productive environment.

We strongly advise that you read through the next few pages of this manual, which explains all the modes of operation and relevant safety precautions for your new solar array transfer switch. If your SATS requires service or repair please contact us on the details below.

Please remember to complete your registration online to validate your 2-year manufacturers warranty. <http://warranty.latronics.com.au>

Please retain your receipt as proof of purchase.

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Latronic Sunpower Pty Ltd ("Latronics") provides the original purchaser of a Latronics product ("You") with the following Limited Warranties as set out in this warranty certificate, in addition to your rights and remedies under consumer law. The Limited warranty periods of this device is 2 years. In all circumstances Latronics products are guaranteed from the date of purchase

## Part 1 - Warranty Descriptions

Latronics warrants to You that our products are guaranteed against defects in material or workmanship, when in normal use and service.

What you must do

1. For a Limited Warranty to apply the Registration Card must be validly completed by You and returned, prior to the expiration of 3 months from the date of purchase.
2. You must provide proof of purchase.
3. Latronics recommends You keep your receipt as proof of purchase, should any difficulties arise concerning the return of your Registration Card.

### Exclusions:

For the avoidance of doubt, the Latronics product warranties provided herein do not cover damage, malfunctions or service failures caused by, amongst other things:

- Unauthorized opening of the products, repair, alteration or substitution of nonstandard parts;
- Incorrect design and/or installation of 'balance of system';
- Acts of god, accident or similar cause;
- Failure to follow Latronics installation, operation or maintenance instructions;
- Abuse, misuse or negligent acts;
- Power failure surges, lightning, fire, flood, pest damage, accidental breakage, actions of third parties and other events or accidents outside Latronics' reasonable control and not arising from normal operating conditions;
- Suitably qualified personnel not carrying out all AC and DC permanent wiring in accordance with relevant wiring rules.

Products supplied by Latronics, or Latronics agents are supplied under the express condition that no responsibility is implied or accepted by Latronics for any damage to any appliance, equipment or property used in combination with the correct operation of a Latronics product.

All conditions and warranties expressed or implied by statute, common law, equity, trade, custom, usage, or otherwise howsoever are hereby expressly excluded to the maximum extent permitted by law. Where so permitted, the liability of Latronics for a breach of condition or warranty that cannot be excluded is limited (at Latronics option) to the replacement or repair of the goods or of acquiring equivalent goods or the cost of replacing or repairing the goods or of acquiring equivalent goods.

Latronics does not undertake any commitment to guarantee continuity of supply in the case of obsolescence. In addition, Latronics reserves the rights to change its standard product range or specification of any model subsequently without notice and no liability as a result of these occurrences will be accepted.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

## Part 2 – Returning a Latronics product for service under warranty.

If service is required contact your local supplier/installer or place of purchase for advice.  
To Claim Under Warranty:

1. You should contact the Customer Care Centre on 1300 550 204. Product Model number and Serial number need to be readily available to enable prompt processing.
2. If, after investigation, the Customer Care Centre determines the product is or may be defective in material or workmanship and within the warranty period, they will issue instructions on how to proceed with return and shipping to Latronics.
3. When packaging a Latronics product for return appropriate measures must be taken by You to ensure the products are safely packed for transit. Products damaged in transit due to inadequate packaging will be void of warranty.
4. If the product manual has a Warranty Return Form included, this form should be completed and accompany products being returned.
5. If, as a result of further investigation by or on behalf of Latronics, such a defect is confirmed, then Latronics must, at its sole election, either repair or replace your Latronics product. Latronics will also, at their discretion, determine the most appropriate means to return any Warranty repairs (or replacements) to You in a timely manner.

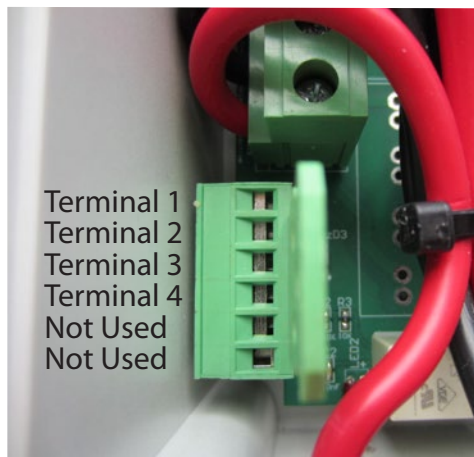
## Part 3 - General Information

Replacement of any part or labor involved in repairs will not have the effect of extending the original period of the Limited Warranty of the goods. Any faulty part replaced under Limited Warranty becomes the property of the Company for purpose of examination and claim under proprietary warranty.

Under these product warranties, Latronics is not responsible for and you hereby agree to bear any costs associated with removal, transportation or re-installation of your Latronics products or any peripheral components in the balance of any system used in conjunction with Latronics products. Products returned to Latronics without prior authorisation will be returned to the sender at their expense.

All Warranty repairs are completed ex-factory to ensure

- Fast service turn around time
- Specialised, factory trained technicians
- All required components are available (except in the case of obsolescence)
- Thorough testing to all Latronics specifications
- Dedicated test equipment
- Upgrades/updates to latest Latronics standards/specifications (where applicable).



## Configuration Options and Monitoring

The SATS is triggered by an external signal such as an output from a solar charge controller. This trigger is 24V d.c. to terminal 1&2, polarity does not matter.

The SATS also has a dry contact auxiliary output across terminals 3&4 so that you may attach an external light, indicator or alarm.

You can connect multiple units using one SATS as the master and have up to 10 slave units.

Use double insulated flex cable size 0.75mm<sup>2</sup> - 2.5mm<sup>2</sup>

Suggested cable to use is 2 core 1.0mm<sup>2</sup> double insulated flexible cable

Ensure the outer diameter of the cable sheath is between 5mm - 10mm to fit correctly through the cable entry gland. Please pay special attention to this gland to ensure the hole is completely sealed and no water ingress is possible.

Both the trigger and the aux output are electrically isolated from the solar array.

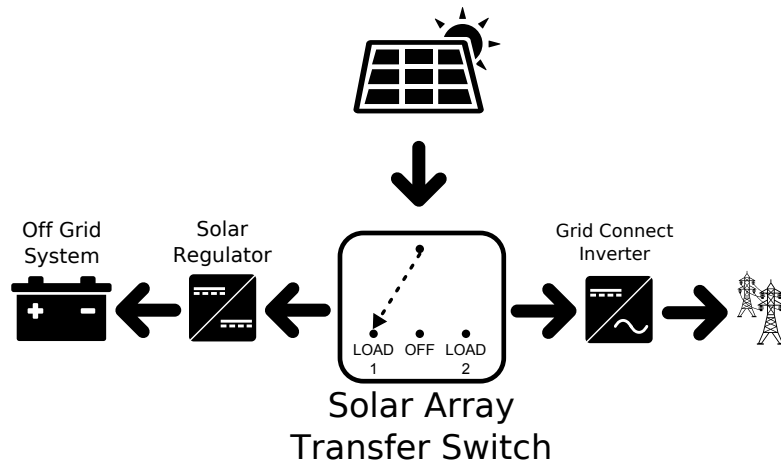


## GENERAL SPECIFICATIONS

	MODEL	
	SATS210	SATS220
Automatic transfer switch classification	Class PC	
Utilization Category	DC-31A	
Number of Poles	Double Pole (Switches - and +)	
Type of Current	DC only	
Operating Sequence	Load 1 NO, Load 2 NO	
Rated operation voltage (Ue)	100-450V d.c.	100-600V d.c.
Rated insulation voltage (Ui)	600V d.c.	600V d.c.
Rated impulse withstand voltage (Uimp)	4kVA	
Rated operation current (Ie)	10A	20A
Rated making and breaking capacity	1 x Ie	1 x Ie
Rated short circuit making capacity (Icm)	12A	20A
Power Connectors	MC4	
Rated Duty	Uninterrupted Duty	
Transfer time	2 seconds from one input to another	
IP rating	IP65	
Pollution Degree Suitability	3	
Environment	2/B	
Compliant to Standard	AS/NZS 3947.6.1, IEC 60947-6-1, RCM, CE	

### Auxiliary Connection

Remote input	24V±2V d.c. (max current draw 20mA)
Output relay	Volt free contacts (Max 255V a.c. 50Hz 10A)



## OVERVIEW

The Solar Array Transfer Switch (SATS) diverts a solar array from one load to another.

The SATS can be used to convert an existing or new grid connect system into a hybrid grid connect/off grid system.

On power up both outputs are in the off position.

After 2 seconds output 1 is connected.

When trigger is set both outputs are turned off for 2 seconds then output 2 is connected.

## Before Installation

Ensure that the product has not been damaged in transit

Check all parts are present

The installation shall only be performed by qualified personnel and in accordance with the relevant wiring installation standard applicable to local regulations. E.g. AS/NZS 5033 and AS/NZS 3000.

## DC Cabling and Fuse Protection

The SATS is supplied with MC4 cable couplers to simplify connection.

Before attaching the couplers ensure all sources of supply are isolated.

Ensure that the open circuit voltage of the solar array will never reach the maximum operating voltage of the SATS taking in to account the array may be subject to extremely low temperatures.

**Ensure the input to the SATS is protected by a d.c. circuit breaker 10A (SATS210) or 20A (SATS220) DC circuit breaker.**

**Observe polarity**, incorrect polarity can result in failure of the device and may cause fire.

## Maintenance

The relays used in the SATS have a life of 10 years, this assumes two switching events per day. After this 10 year period the relays must be replaced. This is not a user serviceable part and must come back to Latronics for replacement.