



BOBIL VANS AIR XCHANGE

ELEMENT UPGRADE INSTRUCTIONS





Important Safety Instructions! Please save these instructions!

This manual contains important safety, installation, and operating instructions for the 12V Element Xchange Upgrade.

The manufacturer accepts no liability for damage by:

- Incorrect assembly.
- Damage resulting from mechanical influences or excess voltage.
- Modification or tampering with the unit without expressed permission from the manufacturer.
- Used for purposes other than described in this manual.

General safety

- Firmly secure all cables and hoses.
- In the event of product failure, do not attempt to repair the water heater. Inadequate repairs may cause serious injury.
- Electrical devices are not toys - keep away from children.
- Disconnect the product from the battery and mains power each time before cleaning or maintaining the heater.
- This product is for 12V battery banks only. Make sure your voltage specification is within the input voltage range expressed.
- Install and store the product in a dry and cool place.
- Keep electronics away from liquids!
- Do not use the product if physically damaged or with visibly perished hoses.

Installation

- Ensure secure location where it cannot tip or fall.
- If necessary, verify installation with a qualified electrician or installer.
- Lay cables so they cannot be damaged or be a tripping hazard.
- Do not operate in salty, wet, or damp environments; in the vicinity of corrosive fumes; in the vicinity of combustible material; in areas with risks of explosions.
- Ensure proper cable sizing for currents generated.
- Over-current protection devices should be on the positive line.

Thank you for buying our products!

Small businesses like ours only exist because of the support of our customers. We appreciate you purchasing from us, and hope that you have a great experience.

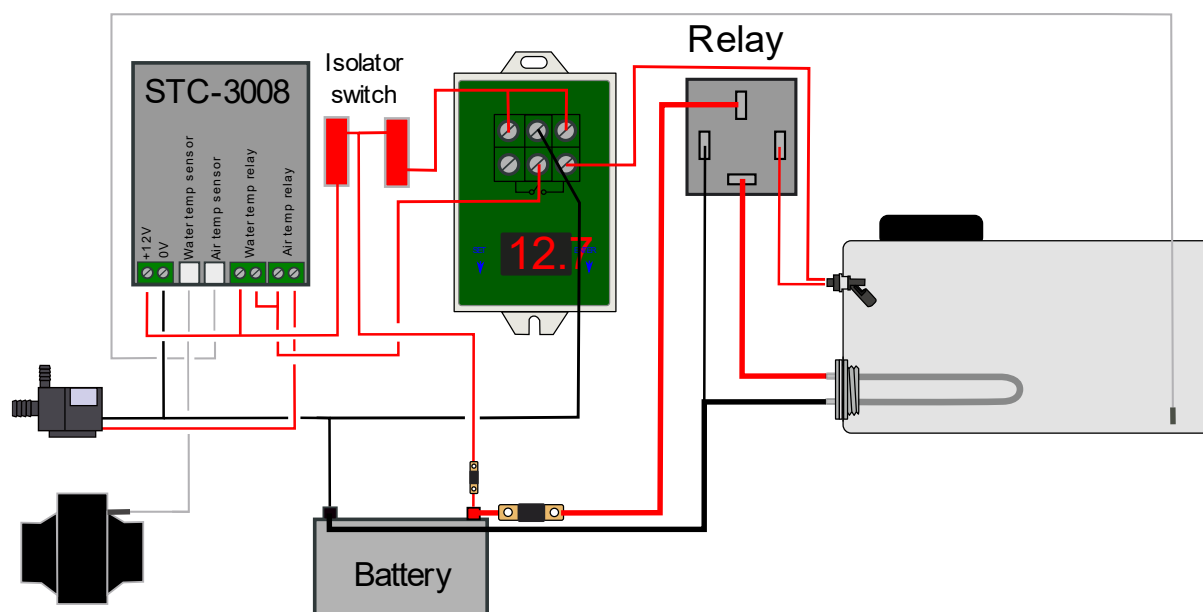
If you have any installation questions or queries then just get in touch, we're here to help. Contact us at info@bobilvans.co.uk or on the phone at +44 1275 261074

What comes in the box?

1. 300W Electrical Element	2. High Current Relay
3. Solaris Controller	4. Float Switch

Installation

1. Drill and deburr a 34mm hole in the side of the tank to fit the element. This hole should be around 60mm from the bottom of the tank and be centrally positioned. Fit the element to the tank, fitting the seal on the outside of the tank. Ensure that the thermocouple cannot come into contact with the element.
2. Drill and deburr a 12mm hole towards the top of the tank. This is for the level sensor. The heater element will therefore only come on if the level sensor is activated. This means the element cannot be run dry.
3. Wire up the system as shown. The heater element will pull 25 amps in use, so ensure all cables are appropriately sized and fused.



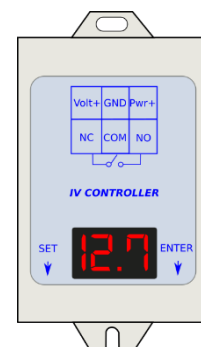
If you have the old style controllers, there is no need to replace them with the newer style controllers. Simply wire them so they are both permanently powered, then wire through the relay terminals as per the diagram above.

If you would like to halve the power of the element, then remove the connecting lugs on the back of the element. This will just use one of the elements, halving the power consumption.

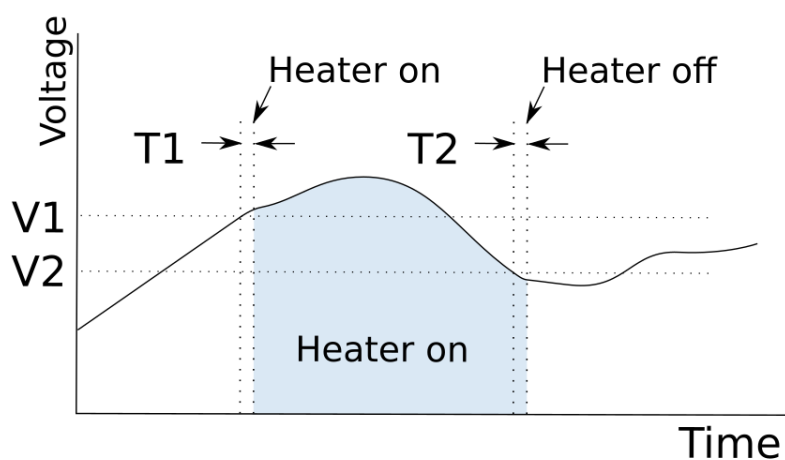


Voltage Controller Programming

For a video on programming the controller scan the code below:



The controller will wait for the battery voltage to go above the programmed limit (V-1). When it does, it will wait for a short time delay (T-1) before switching on the relay. The relay will stay closed until the voltage drops lower than the second programmed limit (V-2), when it will start a second time delay (T-2) before switching the relay off. We recommend that T-1 is set to a minimum of 300 seconds which will stop the relay being switched too quickly if there is not enough power to maintain the voltage. Likewise, the second time delay should always be set to '0' so the relay clicks off quickly to free up power if there are any other loads placed on the battery.



Note that for the element to stay on, you must have enough power coming in to maintain the voltage. If the element is turned on then immediately goes off, it is because the power supplies are not sufficient.

Suggested Solaris Values

The following voltages are only suggestions, you may need to alter them according to your battery and solar set up.

Suggested values	Turn on threshold (T1)	Turn off threshold (T2)
Lead acid/AGM batteries	14.0	12.8
Lithium batteries (Summer)	13.5	12.4
Lithium batteries (Autumn-Spring)	13.8	12.7