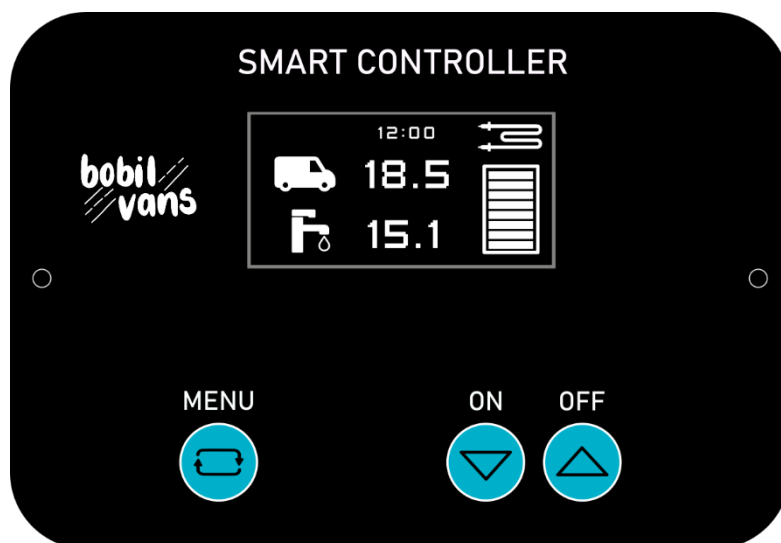




BOBIL VANS SMART CONTROLLER

USER GUIDE





Important Safety Instructions! Please save these instructions!

This manual contains important safety, installation, and operating instructions for the Bobil Vans Smart Controller.

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

- In the event of product failure, do not attempt to repair the controller. Contact us for support.
- Electrical devices are not toys – keep away from children.
- This product is for 12V circuits only. Make sure your voltage specification is within the input voltage range expressed. Do not connect to a 24v circuit.
- Install and store the product in a dry and cool place.
- Keep electronics away from liquids!
- Do not use the product if physically damaged.
- Over-current protection devices should be on the positive line.

If you have any questions about your installation, please email us at info@bobilvans.co.uk

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



Box contents

1. Bobil Smart Controller	5. Fresh water level sensor (If ordered)
2. Slave box	6. Waste water level sensor (if ordered)
3. Connection cable	7. Servo extension cable
4. Duct sensor	

Introduction

The Bobil Smart Controller offers a host of features for controlling the Bobil water system. The key features are:

- Control of both Chinese, Autoterm and other heaters
- Automatic diverter control
- Accurate temperature feedback for cabin temperature and water temperature as well as the temperature outside of the vehicle.
- Routines for both air heating, water heating and both air and water heating, which can be set with a timer.
- Operation of the 12v element based on the system voltage
- 9 point water level display with a 'tank full' reading for the waste tank
- Remote operation from a phone via wifi
- Significantly simpler wiring and installation

These instructions go through each screen of this controller. We also have a video explanation/tutorial as well, which you can watch by clicking the QR code below.

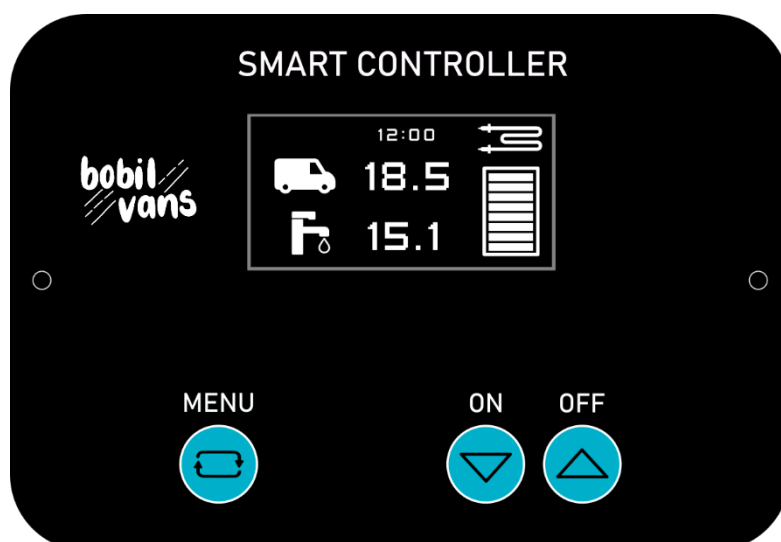
<https://www.youtube.com/watch?v=AoHyYec-9ko>





Operating the controller

The controller has three button inputs. The left hand button is a menu scroll button. Press this button to scroll through the different screens. The other two buttons are used to turn the routines on and off, and alter the time and temperature.



The screens are:

1. Main status screen
2. Secondary status screen
3. Air heating routine screen
4. Water heating routine screen
5. Air and water heating routine screen
6. Set time for air/water heating
7. Enable air and water heating timer
8. Air target set point screen
9. DC heating element control screen
10. Time setting screen
11. Settings screen
12. WI-FI connection screen

Leaving the controller for 60 seconds will default back to the main status screen.



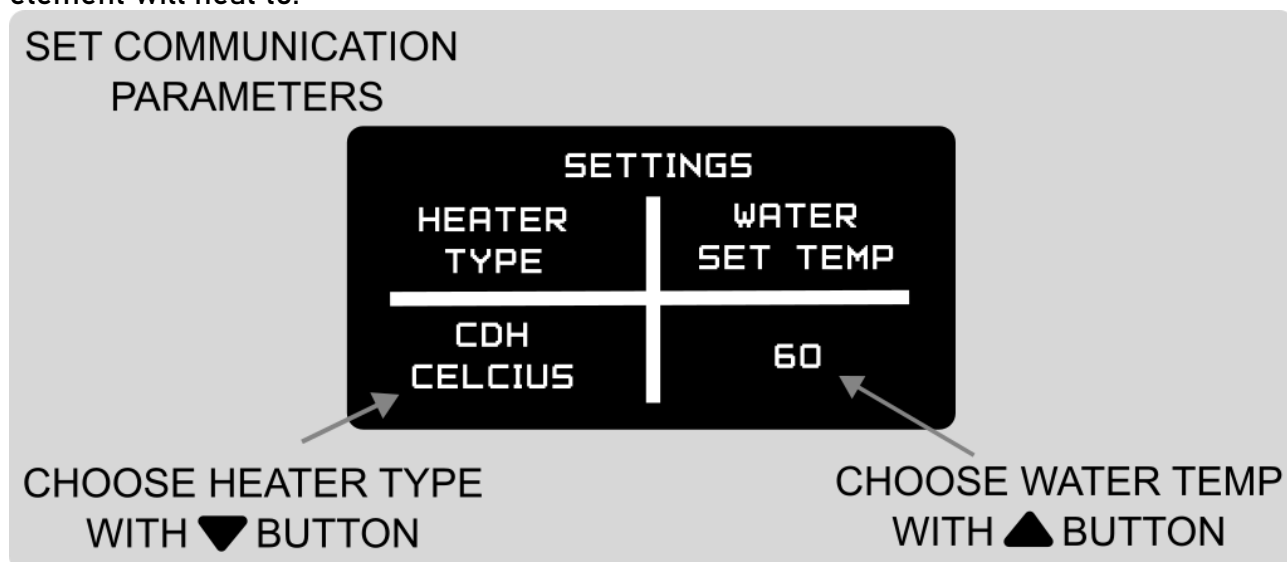
Setting up the controller for your brand of heater

The Smart controller has several different modes of operation, accessed via the settings menu. Before your controller can be used, you must ensure that it is set up for your brand of heater.

Once the controller is installed, scroll through the menus to the settings screen. This screen allows you to tell the Smart Controller which heater you have connected to the controller. Simply use the up and down arrows to change the parameters. Once the parameters are set, you should turn the controller off and on to allow it to boot up with the correct settings.

Note that when changing the heater type there is also the option of Celsius or Fahrenheit available so you can choose which option is right for your region.

The right hand button allows you to change the water set point. This is the temperature at which the diesel heater will be switched off. It is configurable in 5 degree increments from 55 degrees to 75 degrees. It does not affect the temperature that the electric element will heat to.



There are various heaters directly supported by the Smart Controller. They are:

Autoterm: This is used for any heater which is directly connected to the brown and white wires of the smart controller. It also covers Eberspacher heaters and any other heaters operated via a 12v signal from the external control box.

CDH: This is the standard Chinese diesel heater controller.

MAX1/MAX2/MAX3: These are the three different protocols of the Maxspeedingrods remote, you may need to try all of them to see which one connects.

Hcalory: The standard Hcalory heater.

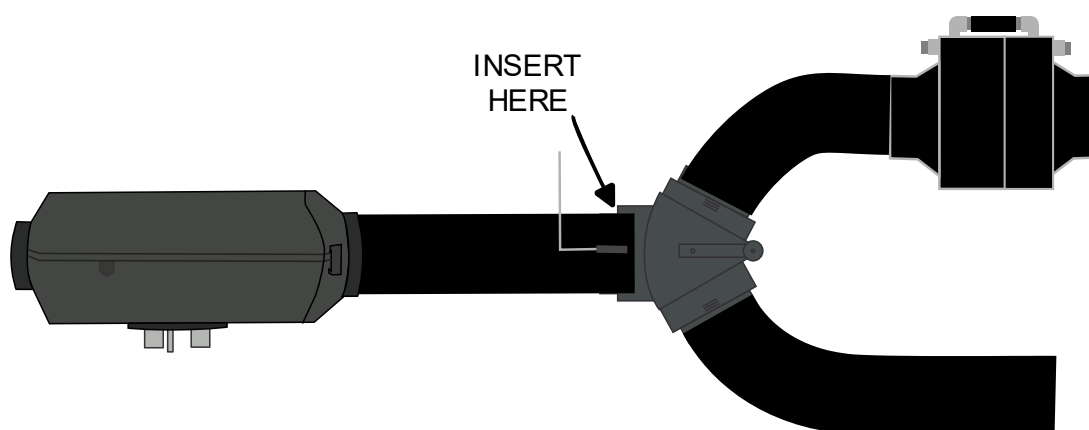
Lavaner: This is the radio version of the Lavaner and Lavaner Pro heaters.

'UNCONT': These are for heaters which don't offer any kind of connection to the smart controller.

Uncontrolled heater mode

'UNCONT' mode allows the Smart Controller to be used in 'Slave' mode with a heater which is uncontrollable. This means that the Smart Controller will respond to the heater turning on and automatically start the 'Air and Water' routine. The controller will switch the diverter to heat water when the air temperature setpoint is reached, balancing the demands of the air and water. This is recommended for use when there is no way of interfacing the controller with a heater, such as Webasto heaters, certain types of Chinese heaters and Propex heaters.

To use the controller in this mode, you need to reposition the duct sensor at the entrance of the diverter. Pull the ducting away from the diverter and insert the sensor before replacing the ducting and gently tightening the jubilee clip. Ensure that the sensor only protrudes into the airflow and does not impede the movement of the flap.



Connecting to A Chinese Heater

The Smart Controller connects to the Chinese heater controller by mimicking the radio signals produced by the key fob, and turning the power level up and down. You do not need to physically wire anything to a Chinese heater- doing so will damage both the Chinese Heater and the Bobil Controller.

Pairing the Chinese controller to the Smart Controller

For the radio commands to be successful, you need to put the controller into pump frequency (Hz) mode. Note that not all controllers have Hz mode, so you will need to check the documentation of your heater. To put the standard Chinese heater controller into Hz mode, press and hold the 'Settings' button (top left) and the up arrow (top right) together, and you will either see a temperature, or a frequency in the form 'P 1.4Hz'.

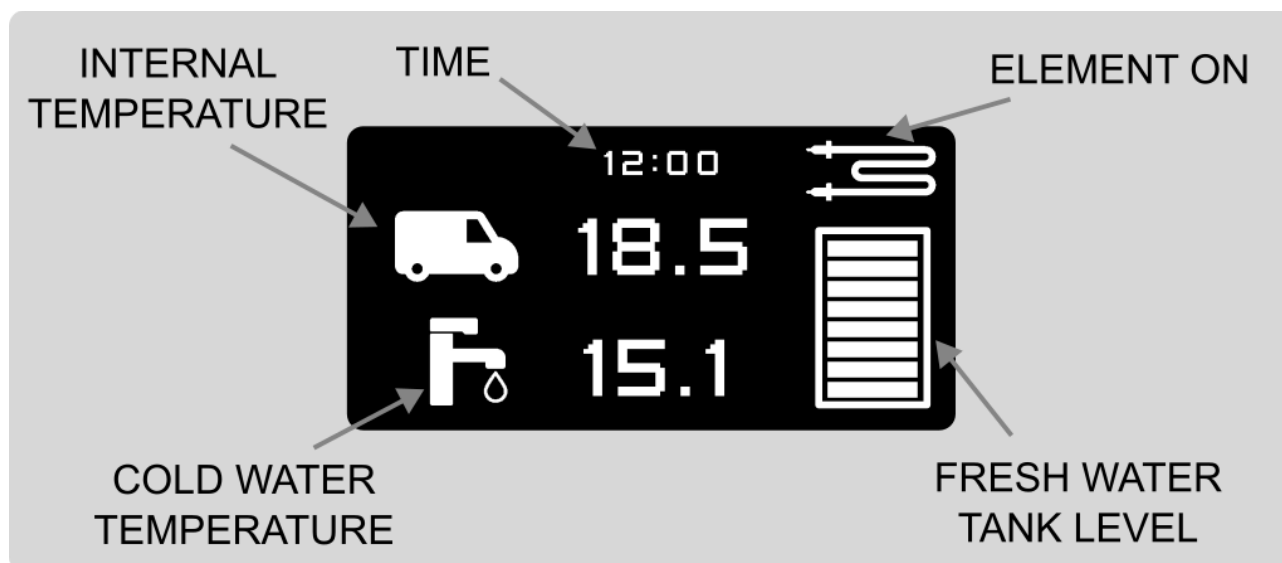
To pair the controller, hold down the up arrow on a black controller until the display reads 'HFA-'. If you now start the water heating routine the controller will listen out for the radio signal, and when it receives it that will pair the two devices. Note that not all Chinese



controllers are the same, you may need to have a look on Youtube for how to change the mode and pair your particular model of heater. Some heaters come ready paired, you may find that your particular heater works without any pairing needed.

The controllers on Chinese heaters are constantly evolving, and new models are being produced all the time. It is possible that the controller that you have is not supported, in that case it is better to use the 'UNCONT' mode, especially if the controller is thermostatic and has a Bluetooth connection.

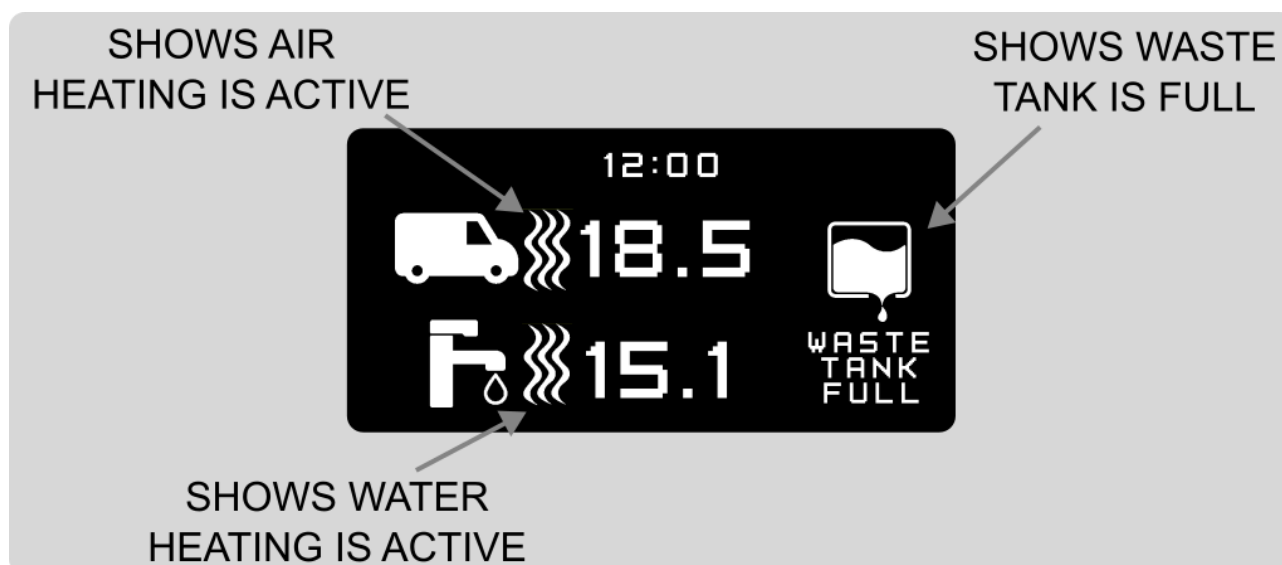
Main status screen



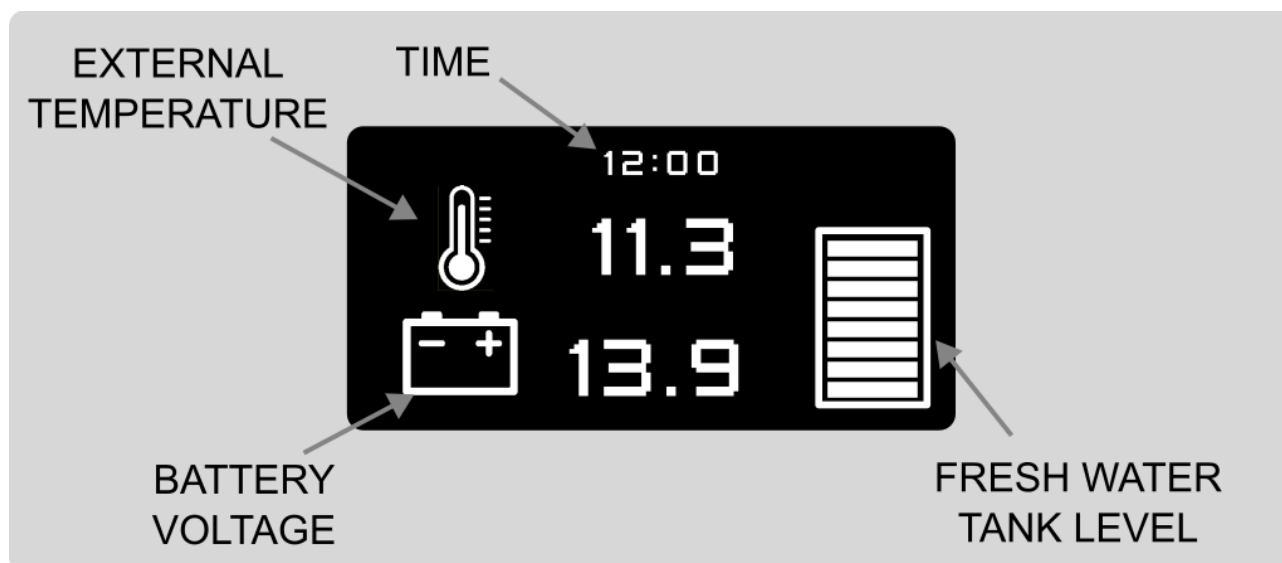
The fresh water tank level is only displayed if the sensor is connected.

If the waste tank sensor is triggered, you will see an icon in place of the fresh water level. As this replaces the fresh level, the level is then displayed on the second status screen.

If a heating routine is running, then additional icons will be displayed.

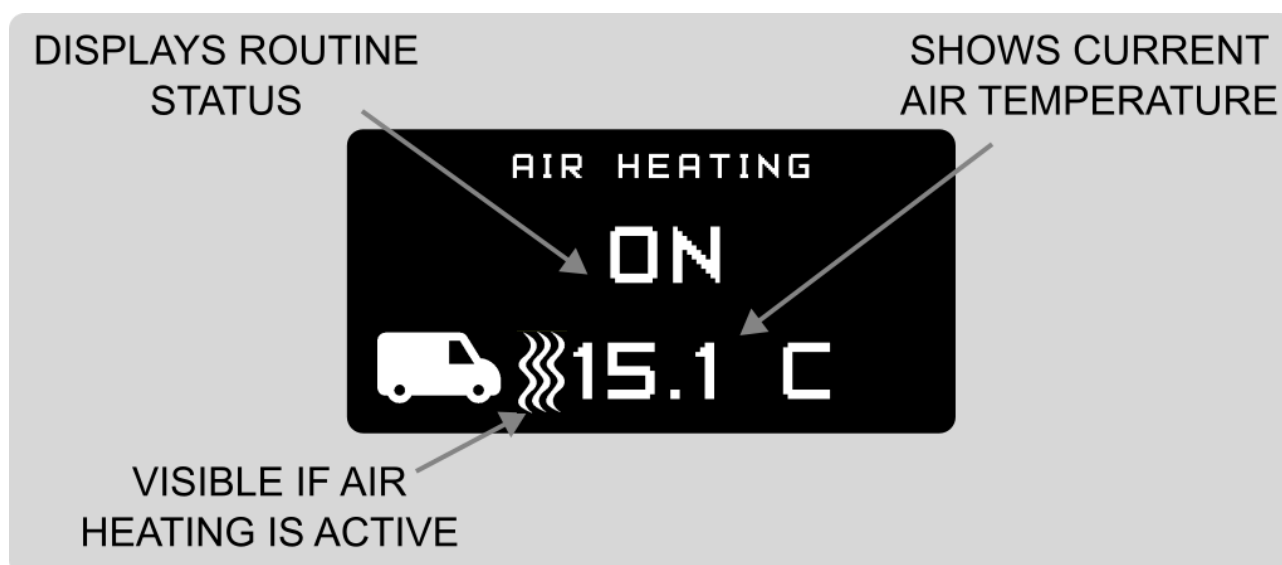


Secondary status screen



Air heating screen

This screen heats the cabin up to the set temperature then attempts to maintain it.



If the temperature goes over the set point by 2 degrees and the heater is on its lowest setting, the heater will be turned off. However, the routine will stay on and when the temperature drops to 3 degrees below the set point, the heater will be turned on again.

When the heater is switched off, you will see a cooling timer. This is because diesel heaters need a few minutes to shut down so no further commands are allowed at this time.

For Autoterm heaters we recommend that the Autoterm controller is used for air only routines.

ROUTINE HAS
JUST FINISHED

DIESEL HEATER
COOLING DOWN



HEATING LOGO
NOT VISIBLE

Water heating

During this routine, the heater will be started, the diverter swings towards the heat exchanger and the water is heated to the set point of 60 degrees.

DISPLAYS ROUTINE
STATUS

WATER TEMPERATURE
DISPLAYED



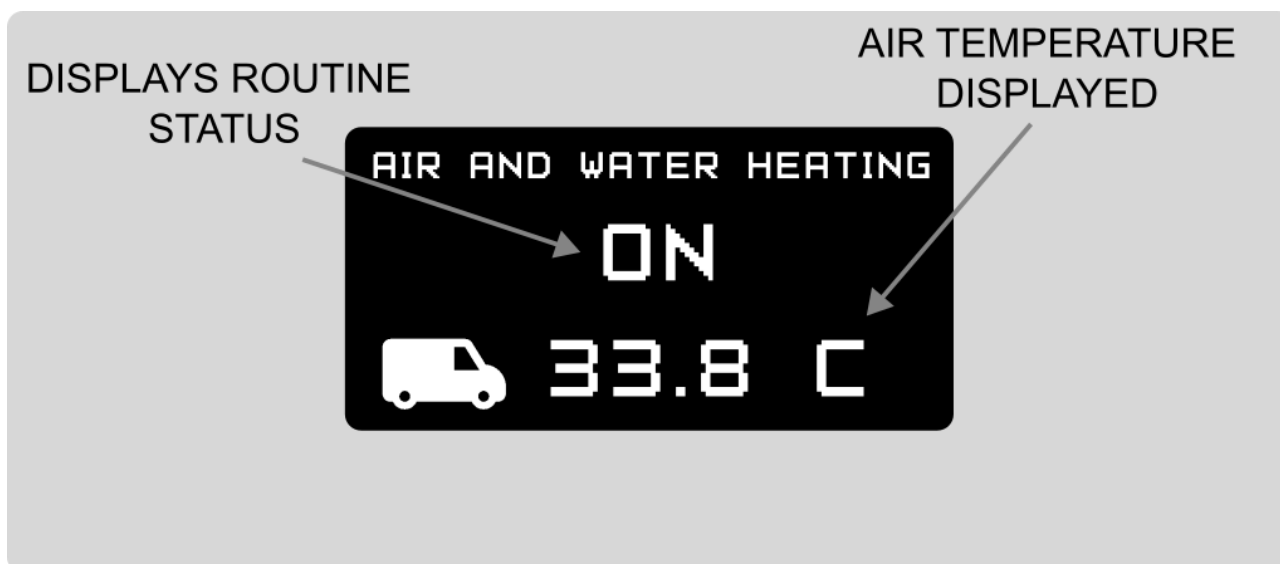
VISIBLE IF WATER
HEATING IS ACTIVE

As with air heating, activate with the 'on' button and stop with the 'off' button. When the desired water temperature has been achieved the heater will be shut down and the routine ends.



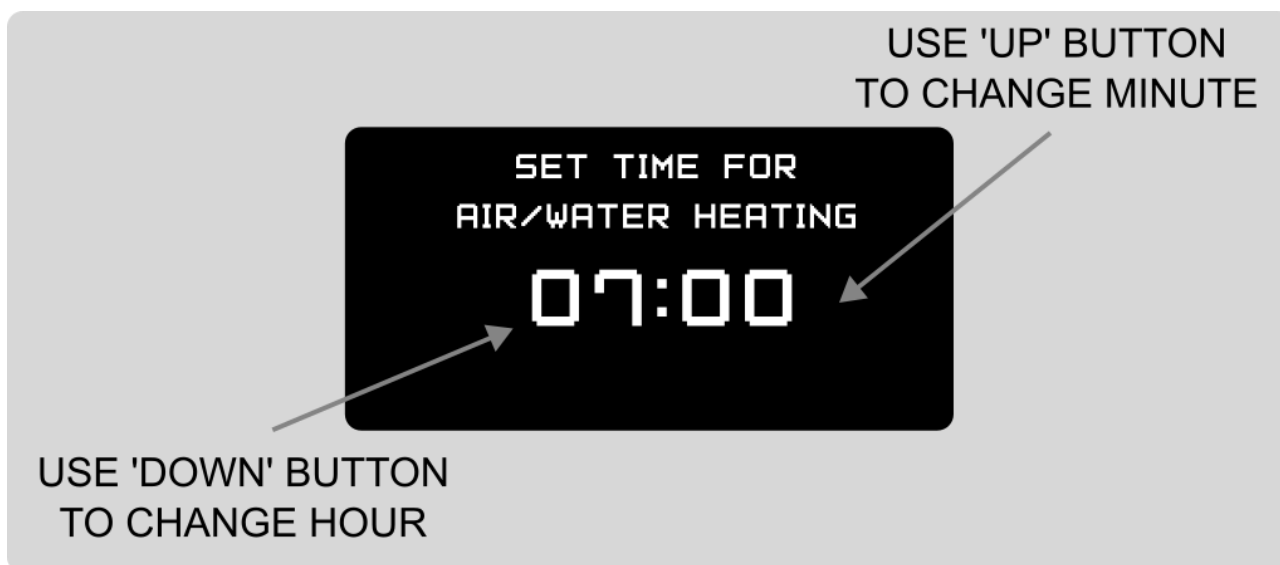
Air and water heating

This routine heats the water and the air to their required setpoints, but attempts to balance the demand between them using the diverter valve. When the air and water are at temperature it will turn the heater off and end the routine. This routine will not run continuously, once the diesel heater has been shut down it will finish.



Timer screen

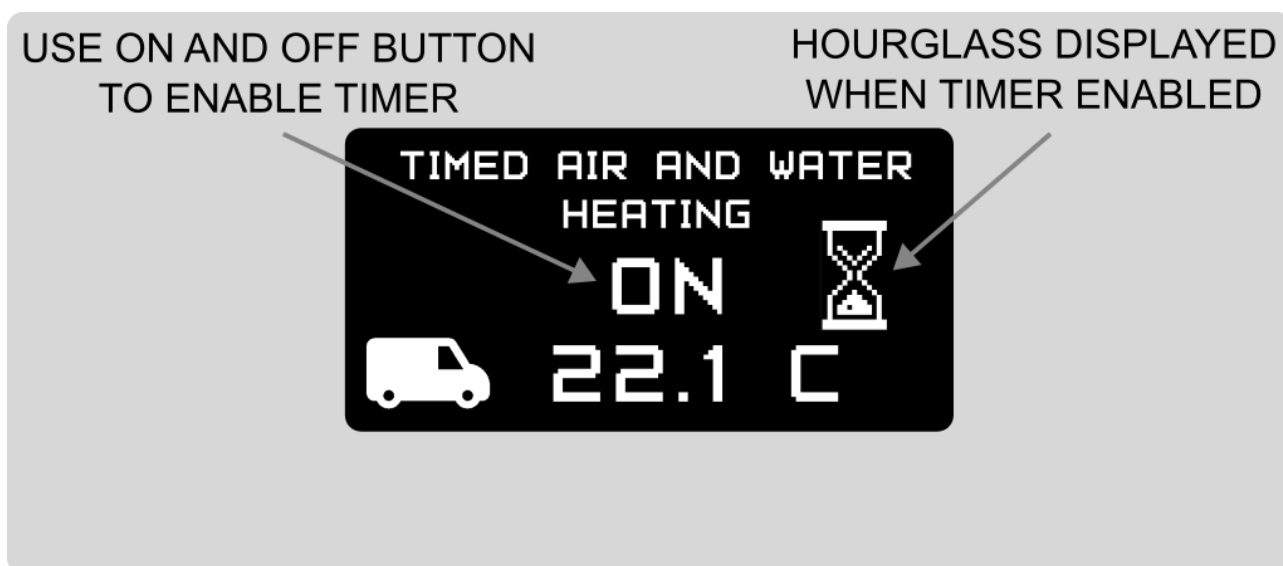
This screen allows you to set a time to start the air and water heating routine. This does not enable the routine, it only allows you to set the time. You need to enable it on the next screen.





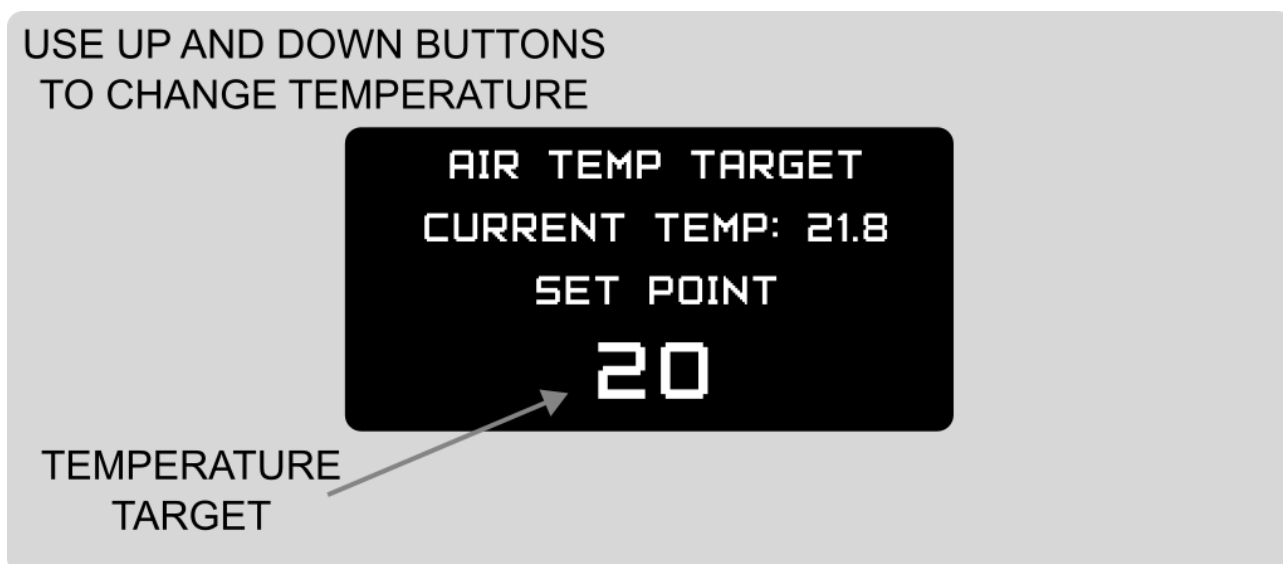
Timer enable screen

This screen enables the timer as set on the previous screen. If enabled, the hourglass will also be displayed on the main status screen.



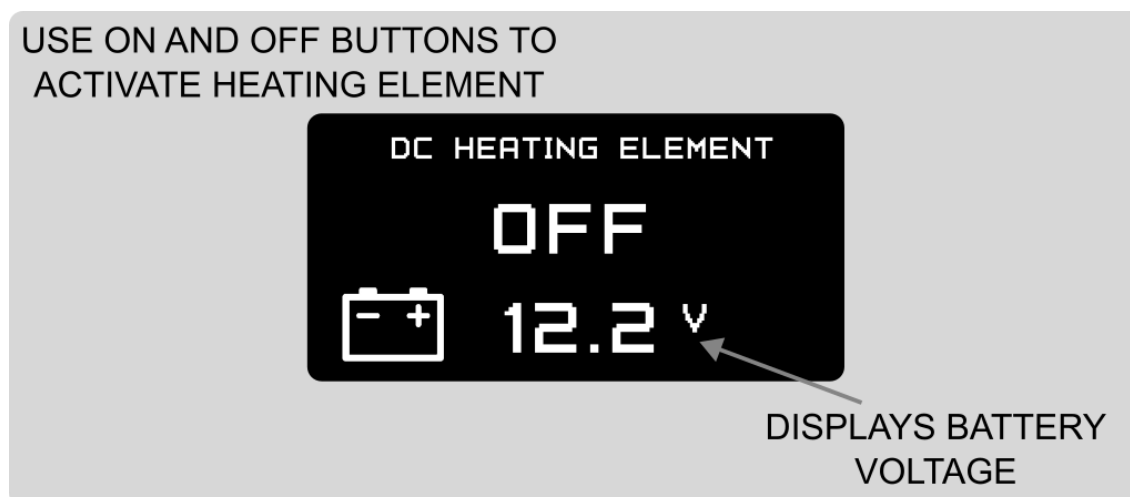
Air temperature setpoint

If you hold down the menu scroll button for 2 seconds then you can shortcut to this screen. Use the up and down button to set the temperature.



DC heating element control screen

This controls the DC heating element. When the target of 13.4 v is reached, a countdown from 300 seconds starts on the home screen, and when '0' is reached the element comes on and the element symbol is displayed. If the voltage drops below 12.8 volts, then the element is switched off and the countdown is reset.



You can change the voltages at which the element is turned on and off. To modify the voltages:

- Navigate to the DC heating element screen
- Hold down the off button for 5 seconds.
- Press 'ON' to modify the 'Turn on voltage'.
- Press 'OFF' to modify the 'Turn off voltage'.
- Press 'MENU' to navigate back to the settings screen.

You can also use the controller in 'uncontrolled voltage' mode.

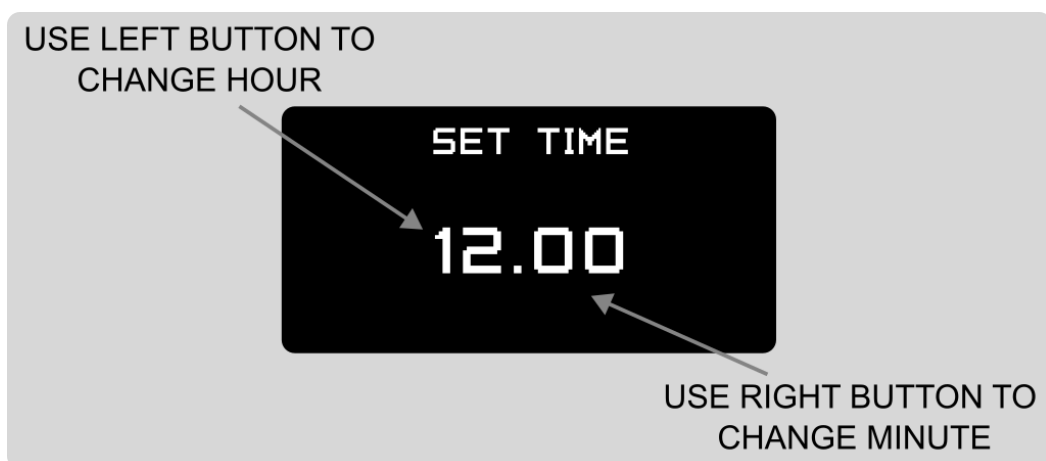
- Hold down the off button for 5 seconds.
- When the voltage select screen is displayed, hold down the 'ON' button for five seconds. This will put the controller into manual mode.
- Press 'MENU' to navigate back to the settings screen

You can now use 'ON' and 'OFF' on the DC element screen to switch the element on and off manually. To switch back to voltage control, hold down the 'OFF' button for five seconds on the voltage select screen.

Note that if you do this, you have no lower voltage limit and the controller will never switch the element on automatically. Use this mode at your own peril- we accept no responsibility for flat batteries!



Time setting screen



Wifi connection screen

The Bobil smart controller can be remotely controlled from your phone via WI-FI. To connect to the unit, go to the WI-FI connection on your phone and enter the password as shown on the screen. Then go to your browser and type the address as shown on the screen.





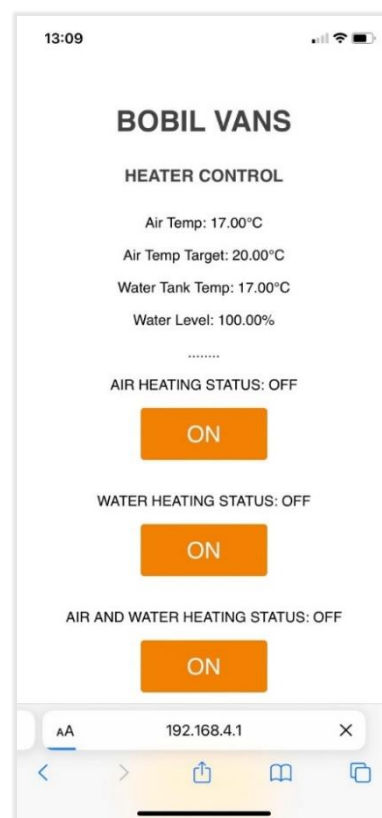
A page will come up like this:

A few points to note whilst using the phone app:

If you have started a routine using the controller, the phone app will not 'know'. To stop a routine, you would have to 'start' it using it using the app, then stop it.

The Smart Controller cannot be connected to any other WI-FI hub, it must have a direct connection to a device.

Depending on your device, you may find that the phone will try and use the Bobil controller as a WI-FI hotspot. If this is the case then we suggest disconnecting from the Bobil controller after you have finished using it as this may cause problems with data.



Troubleshooting

The controller will display an error message if there is an issue, please tell us this message if you do need to contact us!

Error message	Solution
'Sensor error'	Check that the two temperature sensors plugged into the master (top) board are pushed home
'No sensor no likey'	Check that the two temperature sensors plugged into the slave (top) board are pushed home
Comms error	Check for a flashing light on the slave board chip.
Controller seems unresponsive	Sending Chinese heater commands can slow down the heater, so if you have just started a routine then please be patient!
Controller not turning routines on	The temperatures may have already been reached, so check the set temperatures

If there are any issues, then please do get in touch! E-mail us at info@bobilvans.co.uk or call us on 01275 261074



We would love to know what you think!

Please let us know by leaving a review through the link sent through when you made your purchase, or email us at info@bobilvans.co.uk!

You can also share photos of your installation on the 'Bobil Water Heater Users', Facebook page, we'd love to see them!

www.bobilvans.co.uk

@bobilvans



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