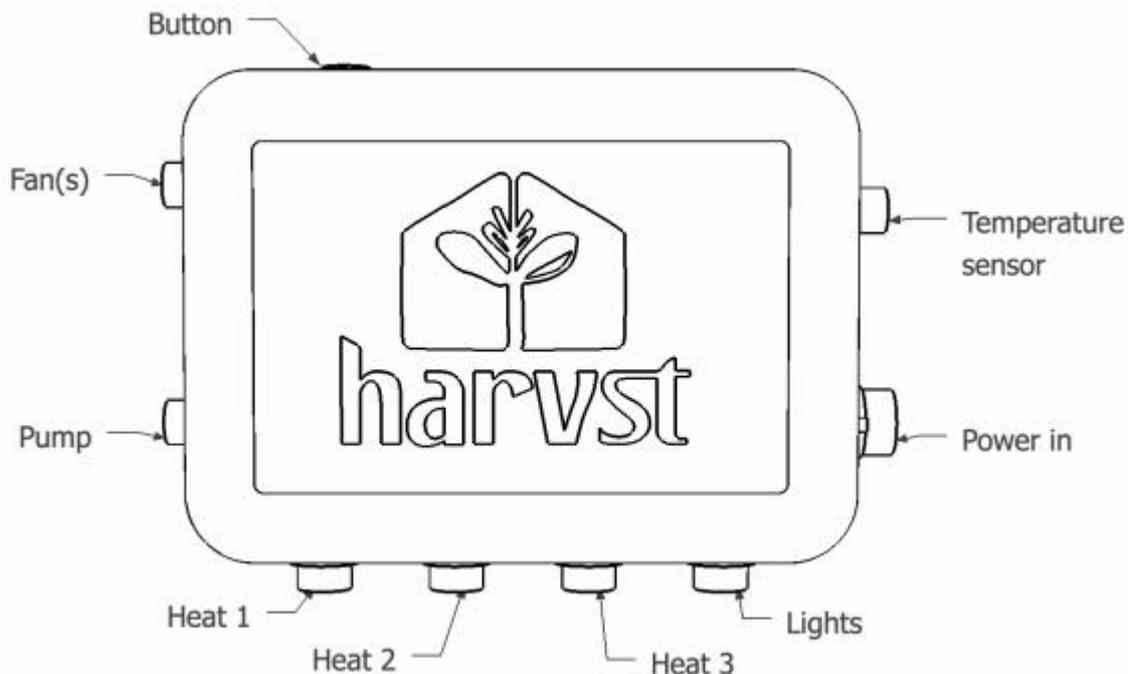


## S8/S16 controller connections

The S8 / S16 mini greenhouse control unit is wired up as follows:



## Configuring the S8/S16 controller

Your mini greenhouse control system is the brain which reads sensor data, and controls heating, cooling, lighting and watering.

Ensure you have connected all wiring to your controller first.

## Connecting your greenhouse to WiFi

If you have a WiFi connection at the greenhouse location (maybe your home network), you can connect the controller to it. This allows it to communicate with the Harvst servers, and allows you to:

- Receive notifications when temperature is too hot or too cold; perfect for a reminder to open the lid on those extra hot days.
- Monitor temperature remotely.
- Receive firmware updates.

To set the controller to online mode read 'Configuring WiFi details' below.

To set the controller to offline mode, simply hold down the button on top while plugging the power in. You will get one long beep to show it's booted in offline mode. Alternatively, just don't configure a WiFi network.

## Configuring WiFi details

This section will help you get your Harvst device (control unit, sensor etc) connected to your home WiFi network. Most Harvst devices have additional functionality when connected to the internet.

Before you continue, make sure you have connected your phone or tablet to the device WiFi, and have the control panel open.

(How to connect to the Device Control Panel section below)

### Connect to the Device Control Panel

To change settings on your Harvst device, or to configure WiFi settings for it to connect to the internet, you will need to connect to the Device Control Panel, a virtual screen transmitted by the control unit.

You can use a phone, tablet or computer.

There are two ways to connect to the Device Control Panel.

1. Connecting via the device's WiFi  
You need to use this method when first configuring the device, and can use it any time later as well if you like. The device will always transmit its own WiFi. Use this method if your device is out of range of a WiFi network.
2. Connecting via your home WiFi network  
If your device is already configured to connect to your home WiFi, it will be visible on your network at a given IP address. If your phone is also on your home WiFi, using the device IP address means you don't have to change your phone WiFi.

#### Method 1 : Connecting via device WiFi

1. Turn on your Harvst control unit and wait a few seconds for it to start up.
2. In your phone WiFi settings, connect to the network which is being broadcast by your device. It will be one of the following, with the **XXXX** being your unique device ID:  
**harvst-XXXX** for WaterMate controllers  
**sprout-XXXX** for S8 and S16 mini greenhouses  
**h-XXXX** for H-series grow systems  
**hmini-XXXX** for the H-mini  
**sensor-XXXX** for wireless sensors
3. Note that the device WiFi network will not have internet access. That's OK. Allow your phone to connect.
4. Once connected, some phones will automatically redirect you to the device dashboard. If not, come back to this screen after you have connected to the WiFi, and click the link below which will take you to the Device Control Panel, which will open in a new browser tab.

**<http://192.168.4.1>**

It's a good idea to bookmark this page, or add it to your phone's home screen, to make it easier to return next time.

## Configure WiFi details

Now your phone is connected to the device, we will give the device your WiFi details so it can access the internet.

5. On the Device Control Panel screen on your phone, click the WiFi settings button.
6. Select your home WiFi network from the list. If it's not there, click Re-scan to scan again. You might need to do this a couple of times.
7. Enter your WiFi password, if you have one.
8. Click save WiFi details.

The control unit will return you to a WiFi test screen while it tests the connection. If the connection was not made successfully, turn the device off and then on again. Often it will connect faster to a new network after a reset.

## Method 2 : Connecting via your home network

The IP address of the Harvst device will be sent to the Harvst servers on a regular basis. On the web app dashboard for this device, you will see a blue button which takes you to the device IP address.

You will need to have linked the Harvst device to your Harvst web account.

## About the Harvst web account

The web account (or web app) is where you can:

- View status of your Harvst devices (eg temperature, humidity, moisture)
- For some devices, change settings remotely
- Use the grow guides and garden journal
- View and contribute to our forums

Your web account is at:

<https://grow.harvst.co.uk>

Some pages show <https://app.harvst.co.uk> ... that's the old link, which still works.

It is not the ecommerce account which you used to place an order online. To access your ecommerce account, log in to <https://www.harvst.co.uk/my-account>.

If there is no response when you click the blue button, it's possible that the device IP address has changed. Try connecting to the Device Control Panel using the device WiFi network instead. On the settings screen you can see the IP address which has been assigned to the device. This will also be reflected in your web app within 30 minutes.

## How to link a device to your web account

If you have connected your Harvst device to your home WiFi (configured it in "online" mode), it will be sending data to the Harvst servers.

Linking the device to your web account gives you access to that data, and for some devices, you can also change settings remotely via the web app.

You will need your device ID, which is a 12-character code of letters and numbers. You can get this from the sticker on the device, on the packaging, or from the Device Control Panel (via WiFi).

1. Register for a Harvst web account at <https://grow.harvst.co.uk>.
2. Open the menu and click "My Account".
3. At the bottom of the screen, click to "Assign a new device".
4. Fill out the form and submit.

You'll be taken to the dashboard for that device.

## Device locations

You can have multiple devices in a single garden location. Perhaps you have sensors and a WaterMate, or an H-mini and an H-series in the garage.

A new location will be created for this device if you don't choose an existing location, or haven't set any up yet.

## Changing settings

Greenhouse settings are changed using the **Device Control Panel**, which is a virtual screen accessed on your phone / tablet / computer ... via the WiFi network that the controller is transmitting.

## Heating

The controller has three outputs for heating. Plug a heater cable into each one. The controller will provide as much power to the outputs as possible, depending on how many lights you have plugged in (lights will have priority of power consumption).

## Heater settings

Using the Device Control Panel (via WiFi / your phone), choose the temperature below which the heaters will come on.

## Cooling

Fans provide active cooling for your greenhouse. To set the temperature above which the fans come on, access the device control panel.

## Cooling settings

Using the Device Control Panel (via WiFi / your phone), choose the temperature above which the fans will come on. If the temperature is just above the required setting, the fans will come on slowly. As the greenhouse temperature gets higher above the target setting, the fans will run faster.

Note that on a hot day, or with lots of direct sunshine, the fans will not be able to cool the greenhouse to your desired temperature. You will need to open the roof manually, which will also aid airflow and be good for pollinators!

## Lighting

There is one output for lights; all lights come on at the same time.

## Lighting settings



There are two lighting periods; for a few hours in the morning and a few hours in the evening if you are supplementing Spring or Autumn light, or have the lights on all day for winter. Note that the lights also provide some warmth.

Using the Device Control Panel (via WiFi / your phone) to change the light settings.

## **Watering**

The S8 and S16 can be used with sprayers, drippers, bottom watering or even hydroponics. The pump output can be set to come on for X minutes every Y hours.

## **Factory reset**

Harvst devices can be returned to factory settings, or near to factory settings, depending on the device.

Hold the water/override button down for at least 15 seconds ... until you hear 5 beeps, then let go.

- Configured WiFi details are reset.
- Any local WiFi password for the device is removed.

## **S8 / S16 irrigation setup**

### **Water source**

Place the pump into a suitable water tank. If your water source is further away than the supplied hose will allow, you can add standard garden hose to extend it. Bear in mind that the available pressure and flow at the drippers / sprayers will reduce if your tank is further away.

If you move the pump, you will probably also need a pump extension cable; these are available in our online shop.

### **Garden tap option**

If you have a garden tap nearby, you can purchase an S8/S16 valve kit to replace the pump; the controller will turn on the valve instead of running the pump. This would give you a lot more pressure to work with, and no danger of running out of water.

### **Water distribution**

Water is fed into the downpipe which is fitted to the rear inside of your greenhouse. Punch holes into the LDPE downpipe, fit barbed joiners, and then connect 4mm micro irrigation hose.

You can use sprayers, drippers, or both, connected to lengths of 4mm hose. What you use depends on what you are growing, and you will explore different options to see what suits you best.

For a starter, try this approach:

- Place your seed trays into larger "watering" or drip trays. Our standard garden tray works perfectly for the S8 and S16.
- Make sure there are drainage holes in the large trays.
- Add some capillary matting to distribute water around the large trays.
- Add a single dripper to each of the large trays.



When the pump runs, the drippers will fill the watering trays, and then water will slowly drain away through the drainage holes.

### **Sprayers**

When using sprayers in your S8 or S16, secure them to the mesh shelves with cable ties.

## **Heating FAQs**

### **How warm can the S8/S16 mini greenhouse get?**

For a typical UK winter, you can expect soil temperatures in your growing containers to stay above 10 degrees C, especially if you're combining your space heating with grow lights, which also give off a lot of warmth. Run the heater cable through the mesh shelves and place growing containers (eg seed trays) on top.

### **Can I use a Harvst mini greenhouse in the north of Scotland?**

Yes, absolutely, though if the outside temperatures are significantly lower than zero degrees your plant growth will slow down. Most plants like soil to be above 5-10 degrees to grow well.... though it does depend a huge amount on what plants you are growing. Choose plants that don't mind the cold as much.

### **Can I control mains powered heaters?**

Not at the moment. In the future we may release a remote switch, controlled by the Harvst system. The inside of a Harvst mini greenhouse is a wet environment and non waterproof mains heaters should never be used.

## **Grow light FAQs**

### **How much heat do the LED grow lights give off?**

The lights give off a decent amount of heat. You won't burn yourself, but the lights will get hot to the touch. We find that the heat keeps the greenhouse nicely warm all through winter, and if you use them in warmer weather, the greenhouse automatic opening lid can be used to regulate the maximum temperature of the interior.

### **What can I grow with grow lights?**

We find that most leafy greens and salads thrive under lights. Make sure you get enough light to the leaves without getting them too hot. When the seedlings are small, raise the tray closer to the lights with a stand, and as the leaves grow, drop the tray.

### **Are the grow lights waterproof?**

Yes, all our LED grow lights are waterproof. They should not be immersed in water, but they will be fine with prolonged direct irrigation from the Sprout watering system.

### **Do LED grow lights actually work?**

Yes! We have a set of mini greenhouses inside our workshop for test purposes, and there's almost no natural light. All the photos you see on this page are of plants that have been grown inside our workshop in a Sprout mini greenhouse.

### **What happens if I overload the control unit?**



The power supply will safely cut-out if you plug in too many lights. It will restart again as soon as the power drain falls below the limit of 150W.

## **Air extraction / fans**

The S8 and S16 mini greenhouses are fitting with active ventilation, which pulls hot air out of the greenhouse when it gets too warm.

The S8 has one twin fan, and the S16 has two twin fans.

### **Summer mode**

The fans turn on when the temperature rises above your chosen setting. They extract hot air from the top of the interior, while pulling cool air in from the back at the base.

### **Winter mode**

The fans are unlikely to come on above the summer temperature (apart from perhaps those mild, sunny days) ... which means it's possible your plants will get too humid.

You can turn on "air recirculation" which runs the fans at a slow speed when they are not required for cooling. They will run for 5 minutes at the beginning of every hour, to remove stale damp air from the mini greenhouse.

### **Smart humidity control**

With a future firmware update (free download for the control unit) we'll be releasing integration with our humidity sensors, to trigger the fans when humidity gets too high.