

ESH

Ecosmart Heater

Installation and Maintenance

1.0 INTRODUCTION

The Ecosmart Heater should only be used as a supplementary heater in conjunction with a Ecosmart supply fan with integral electric heater. It must not be used with any other fans.

The heater is a 3kW single phase unit that requires an independent 230V mains supply to the top mounted terminal box and is supplied with a pre-plugged 10m length of communications cable.

This heater will provide additional heat where the desired temperature cannot be achieved by the supply fan's integral heater alone.

Note: Ideal minimum air velocity through the heater section =2.0m/s.

2.0 INSTALLATION

2.1 Installing the Heater

The heater can be installed into an ISO standard spiral duct run, with either horizontal or vertical flow.

With vertical ducts consideration must be given to items in the run above the heater which could be affected by heat rising when the fan is switched off. All heaters should be kept away from plastic conduits or materials easily damaged by heat (allow for casing temperature of 100°C).

The heater must be fitted indoors, away from any water spray or source of steam. The heater is installed into the ductwork using the fast clamps (do not use flexible connectors) at the downstream side of the supply fan. Larger, heavier units should be adequately supported.

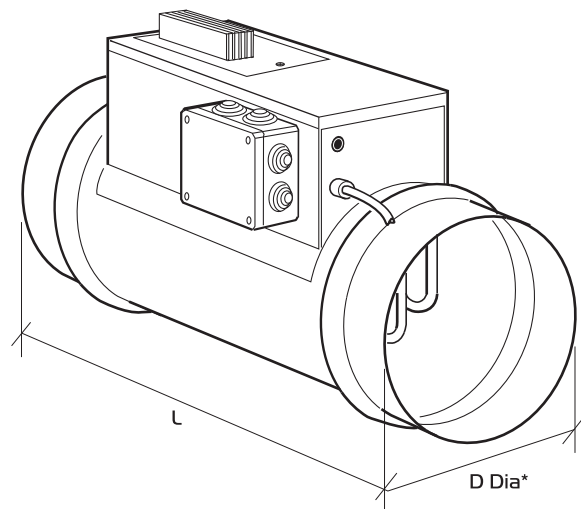
2.2 Installing the Duct Sensor

A combined temperature and airflow sensor is attached to a coiled fly lead. This should be mounted in the duct 1.5-2m downstream from the heater, where the sensor cannot be damaged by heat. A 20mm hole saw and 2 fixing screws will be required.

IMPORTANT

The sensor has an airflow direction arrow and will only operate if installed with the arrow pointing in the direction of airflow.

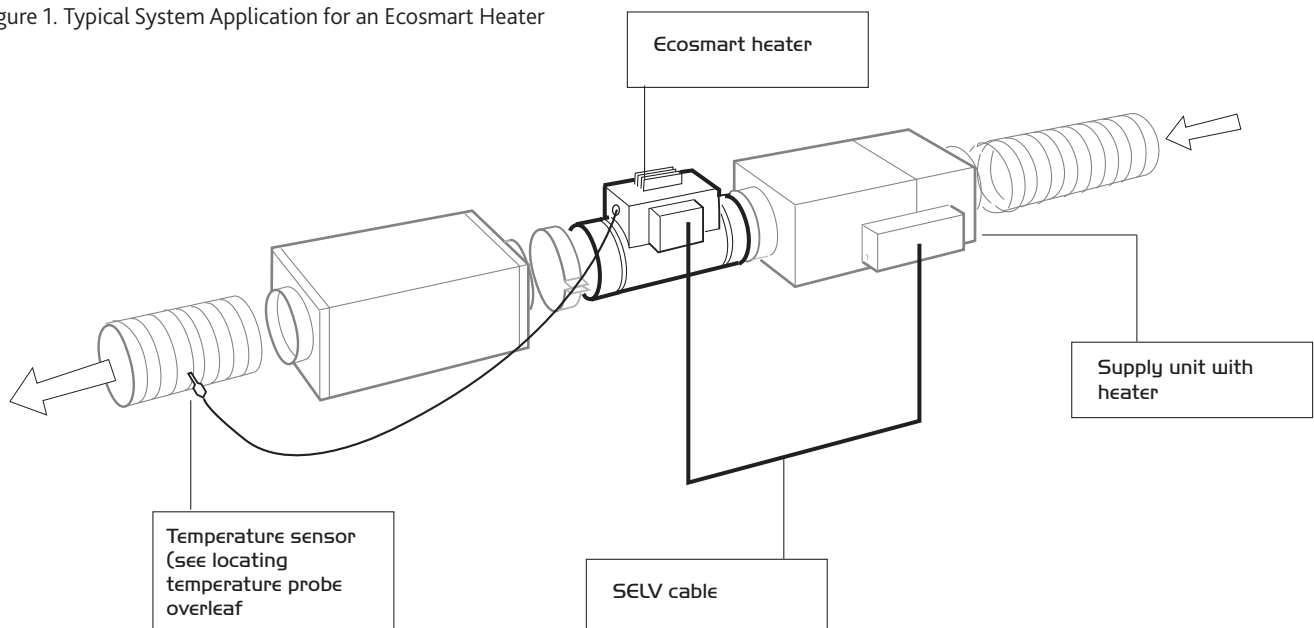
Figure 2. Ecosmart Heater Dimensions



Heater Unit	Matched Unit	D Spigot dia.	L Length
ESH2	ESS2-E	150	400
ESH3	ESS3-E	200	400
ESH4	ESS4-E	250	400
ESH5	ESS5-E	315	400

*Dia. D suits matched Ecosmart unit. All dimensions in mm.

Figure 1. Typical System Application for an Ecosmart Heater



3.0 WIRING

The heater requires two connections; the SELV communications cable link up and the 230V mains Live, Neutral & Earth connection to power the heater element.

IMPORTANT

All wiring must be carried out by a qualified electrician in compliance with the latest regulations.

IMPORTANT

Isolation - Before commencing work, make sure that the unit is electrically isolated via a lockable isolator from the mains supply.

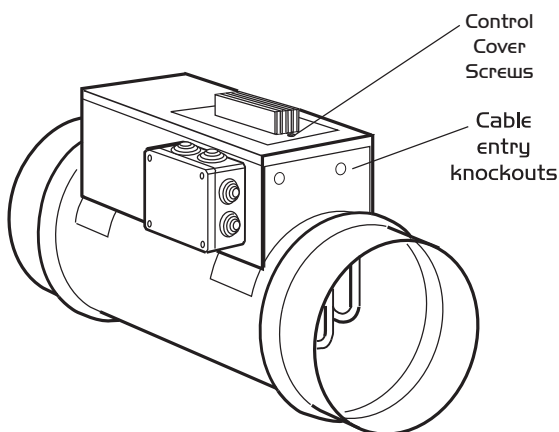
3.1 Wiring the Heater

These heaters are internally pre-wired and require a suitable supply feed connection to operate (see rating label). See the wiring diagram for connection details.

To connect the mains supply to the unit it is necessary to remove the control cover from the heater body.

- Remove the two fixing screws and lift off the cover to reveal the PCB (see Figure 3).
- Knock-outs are provided in the casing panel for cable entry.
- Connect the mains supply Live and Neutral wiring to terminals via the crimp connectors provided (3kW 230V A.C. 1 phase).
- Connect the mains supply Earth wiring to the earth bolt via a ring tongue crimp connector (not provided).

Figure 3. Cable entry knock-outs



3.2 Wiring the Data Cable

A 4-core SELV data cable is used to connect devices. Do not run data cable in the same conduit as the mains cables and ensure there is a 50mm separation between the data cable and other cables. The maximum cable run between any two devices is 300m when it is installed in accordance with the instructions.

Note: the total data cable length used in any system must be less than 1000m. Keep the number of cable joints to a minimum to ensure the best data transmission efficiency between devices.

- Remove the top cover from the terminal box by rotating the four fixing screws half a turn.
- The communications cable (supplied) can now be plugged into the socket marked Ecosmart NET inside the box (see Figure 4).
- The other end of the SELV cable should be plugged into the connection box of the associated supply fan in the system.

Figure 4. Heater SELV Cable Connection

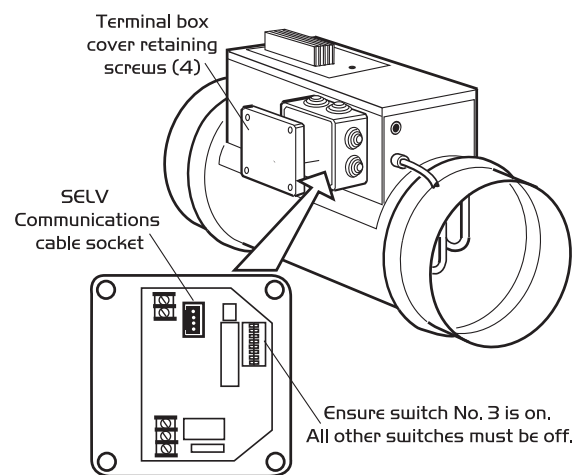


Figure 5. Ecosmart Heater PCB Wiring

FACTORY CONNECTION ———
 CUSTOMER CONNECTION - - - -

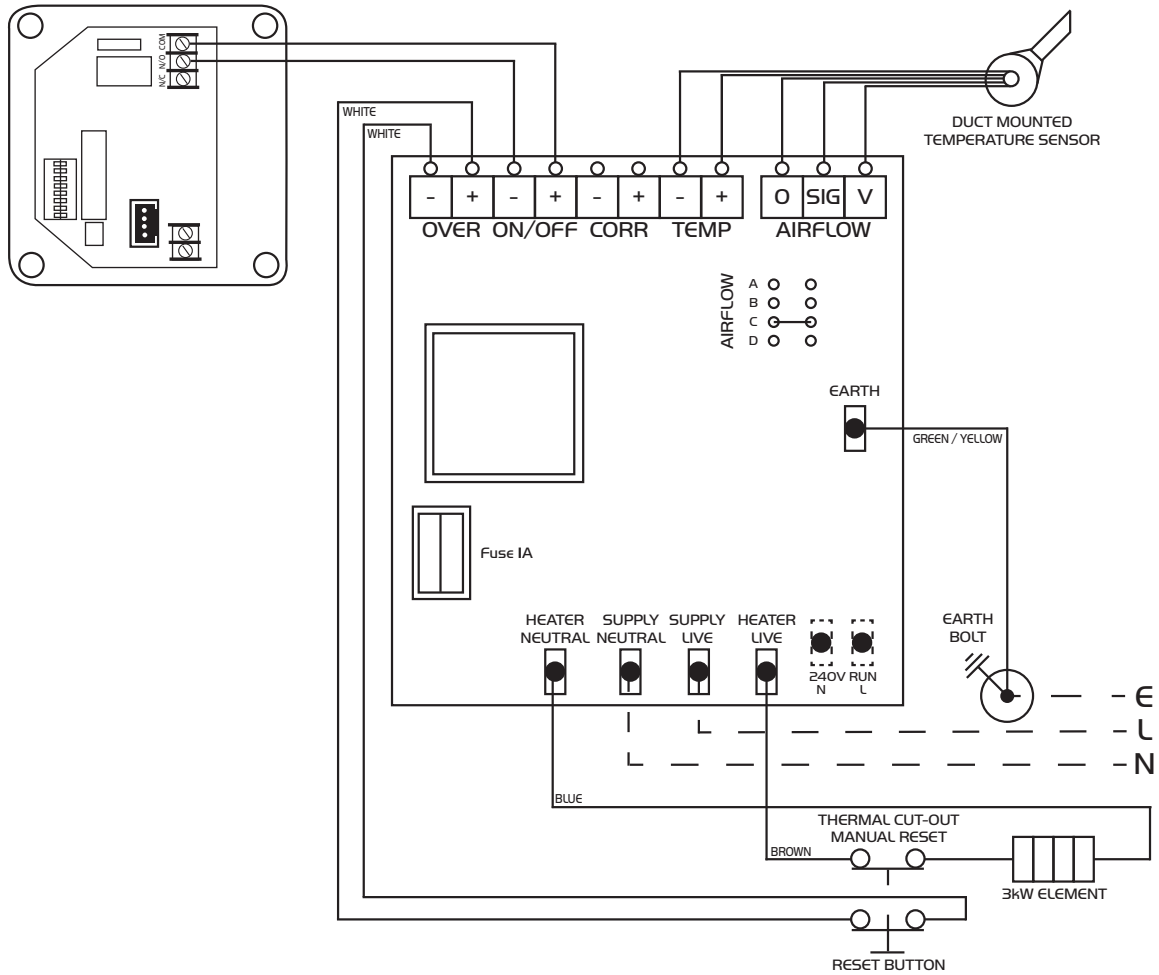
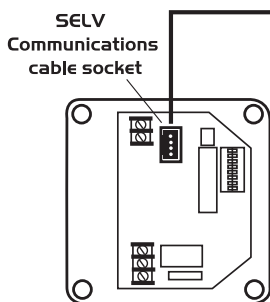


Figure 6. Ecosmart Heater SELV Data Link Wiring

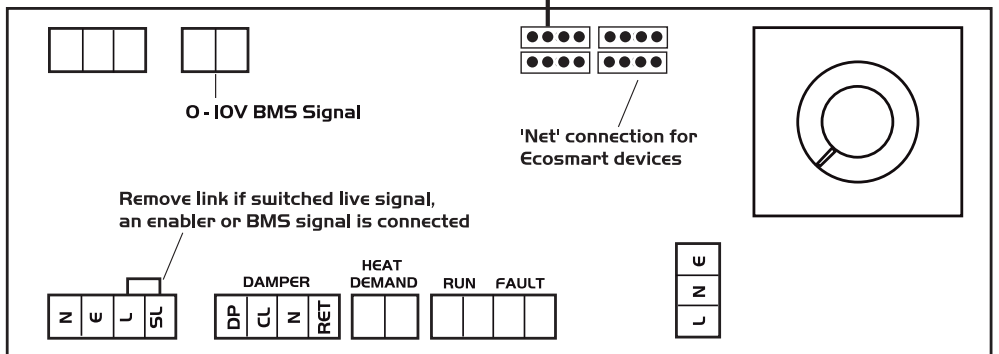
Ecosmart heater

Ecosmart Sqrubo with heater



Switch No. 3 on - all others off

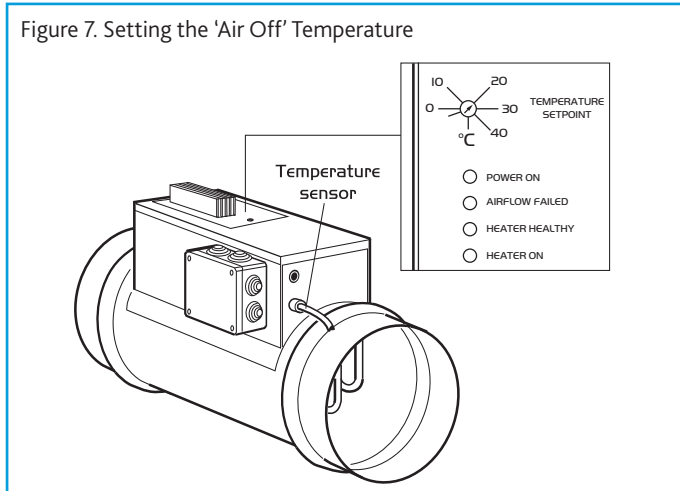
SELV data cable supplied with heater. Plug into one of the 4 sockets provided.



4.0 OPERATION

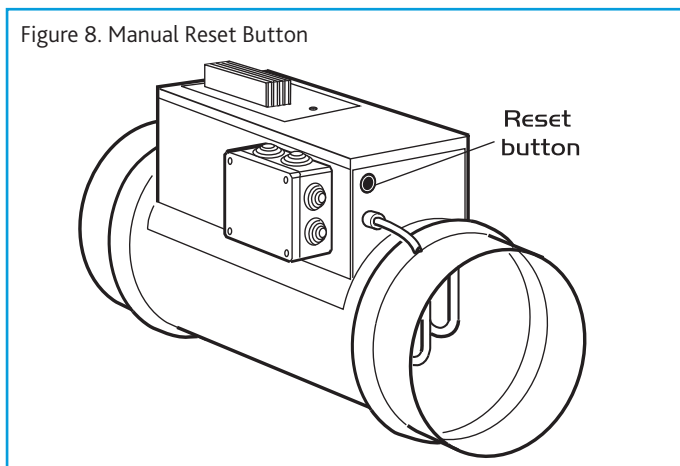
4.1 Setting the 'Air-Off' Temperature

A variable 'air off' temperature adjustment is provided on the top of the heater module (see Figure 7). The setting is adjustable from 0 – 40°C and is achieved by inserting a small screwdriver into the adjuster aperture and rotating the spindle clockwise or anti-clockwise as required.



4.2 Manual Reset Button

The heater will normally operate automatically. To ensure safe operation it has a thermal cut-out with a manual reset button, located on the end of the casing (see Figure 8). This may be used to reactivate the heater in the event of a shut down due to overheating.



4.3 Indicator Lights

POWER - Yellow

AIRFLOW FAILED – Red

HEATER HEALTHY – Green

HEATER ON – Red

With the heater powered but not yet enabled, the YELLOW power and the GREEN Heater Healthy lights will be lit. If the green heater healthy light is not lit then the thermal cut-out has tripped and requires manual resetting. The RED airflow failed light will also be lit if the supply fan is not running.

Under normal working conditions, the heater will display both green and yellow lights with the red heater on light either steady or pulsing according to the heat demand.

If the red airflow failed light is lit, there is either insufficient airflow or the duct sensor has not been fixed to the ductwork correctly.

5.0 MAINTENANCE

The only maintenance required is to check all electrical connections, including field and factory made connections for tightness at least once each year or operating season. In addition, any filters in the air stream must be kept clean so that adequate airflow is maintained.

5.1 Replacement of Parts

Should any component need replacing, Nuair keep extensive stocks for quick delivery. Ensure that the unit is electrically isolated, before carrying out any work.

When ordering spare parts, please quote the serial number of the unit and if possible, the ARC number of the purchase (**this information will be available on the fan label**).

5.2 Warranty

The 3 year warranty starts from the day of delivery and includes parts and labour for the first year. The remaining 2 years covers replacement parts only. This warranty is void if the equipment is modified without authorisation, is incorrectly applied, misused, disassembled, or not installed, commissioned and maintained in accordance with the details contained in this manual and general good practice.

The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuair International Sales office for further details.

5.3 After Sales Enquiries

For technical assistance or further product information, including spare parts and replacement components, please contact the After Sales Department.

Telephone 02920 858 400
aftersales@nuaire.co.uk