



# OPUS 40, 60 & 95

## 230V Surface & Recess Mounted

### Domestic Single & Twin Fans

### Installation & Maintenance



## 1.0 INTRODUCTION

The Nuaire range of Opus 230V fans have been specifically designed to ventilate areas such as the bathroom, toilet, stores, drying rooms, cupboards etc.

The range consists of three duty ranges, 40l/s, 60l/s and 95l/s. The 40 and 60 models are available as single and twin fan variants (twin fans are duty sharing). The 95 model is dual fan only (both fans run simultaneously).

The unit package is supplied to offer the installer 3 alternative mounting options.

Figure 1. Surface Mounted with Rear Spigot

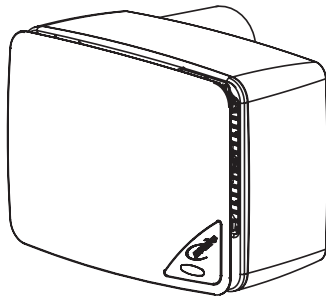


Figure 2. Recess Mounted with Top Spigot (Not Suitable for Opus 95D Units)

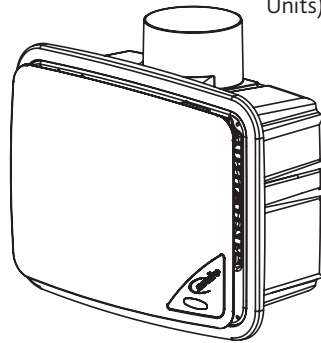
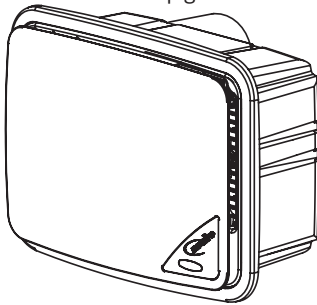


Figure 3. Recess Mounted with Rear Spigot



The unit discharges air through a 100mm diameter spigot which for a surface mounted unit exits at the rear, and for recessed mounting can be discharge either through the rear or top of the unit (see Figure 1 - Figure 3).

Air entering the unit passes through the front grille and can be filtered via an optional foam filter.

The motor(s) are 24V brushless DC. Bearings are sealed, self-lubricating ball type with integral locked rotor protection. The fan / motor assembly can be fitted in one of two positions (see Figure 5 & Figure 8) and is held in place by the yellow fastener located at the rear of the unit.

## 1.2 Ancillaries

Code	Description
OPUS-RFI	Remote Fail Indicator
OPUS-AV1	Remote Fail Indicator for Ecosmart Models Only
HUMISEN	External Humidistat
ES-HUMIDISTAT	External Humidistat for Ecosmart Models Only

## 1.1 Coding Description

### OPUS 40 S - ESPF

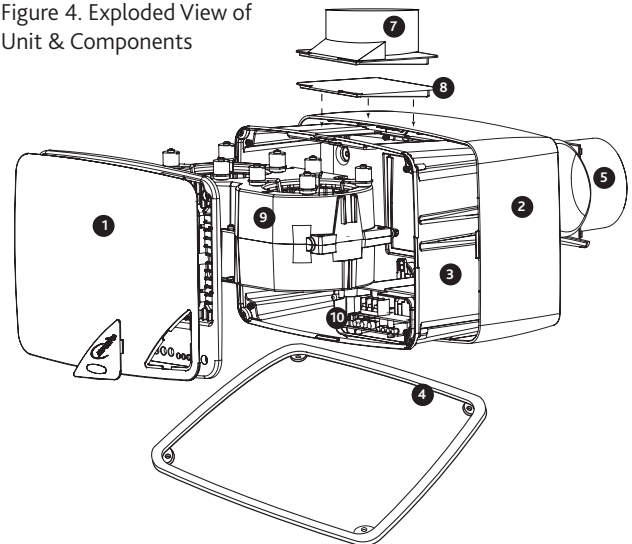
1 2 3 4

- OPUS Range
- Unit Size: 40, 60 or 95l/s (Free Air)
- S = Single Fan  
T = Twin Fan  
D = Dual Fan (2/3rds Duty on Single Fan Failure)
- CF = Speed Control with Filter  
CRF = Speed Control with Run-On Timer and Filter  
ESF = Ecosmart Control with Filter  
ESPF = Ecosmart Control with PIR Sensor and Filter

## 1.3 Fan Components Key

1. Front Cover/Grille - Part No. 040913/912	7. Circular Top Spigot Option - Part No. 040918
2. Outer Casing - Part No. 040915	8. Top Spigot Blanking Plate - Part no. 040921
3. Inner Casing - Part No. 040914	9. Fan Module
4. Recess Flange Option - Part No. 040919	10. Control
5. Circular Rear Spigot Option - Part No. 040954	11. Recessed Frame Mounting Plate (See Figure 9)
6. Rear Spigot Blanking Plate (Not Shown, See Figure 8) - Part No. 040917	12. Screw Kit

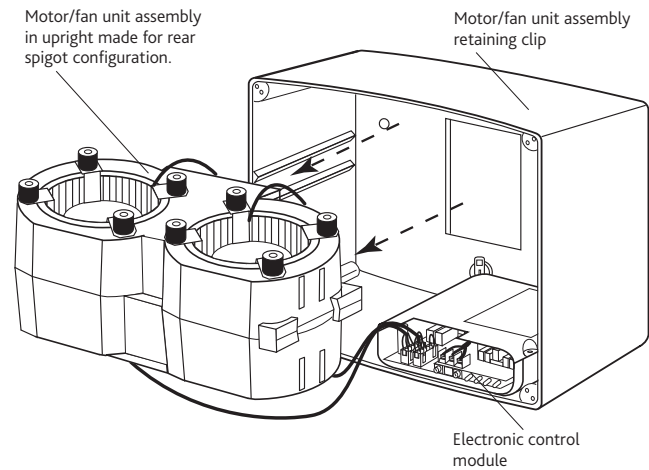
Figure 4. Exploded View of Unit & Components



## 1.4 Screw Inventory

Outer Casing to Inner Casing	4.2 x 9.5 (4 off)
Recess Flange to Inner Case	3.5 x 9.5 (4 off)
Rear Spigot to Inner Case	3.5 x 6.5 (2 off)
Rear Spigot Blanking Plate to Inner Case	3.5 x 6.5 (2 off)
Grille Section to Inner Case	3.5 x 19 (4 off)

Figure 5. Internal View of Unit with Components Removed



## 2.0 INSTALLATION

Installation must be completed by competent persons, in accordance with good industry practice and should conform to all governing and statutory bodies i.e. IEE, CIBSE etc. A solid non reverberant mounting position must be selected and passages for ductwork from the outlet spigot, as well as electrical connection prepared. In addition compatible ductwork has already been installed.

Unpack the fan unit and other components and ensuring all parts are included against the components checklist (see Section 1.3).

### IMPORTANT

**Isolation - Before commencing work, make sure that the unit and Nuair control are electrically isolated from the mains supply.**

### 2.1 Surface Mounted Installation

1. Unpack the unit and components. Discard the top spigot (040918), rear blank (040917) and recess flange (040919). Remove the front cover/grille and disconnect the motors from the control circuit board, noting their orientation. Rotate the yellow retaining clip and remove the fan assembly. Leaving the control unit in place, remove the top section only.

2. Use the base as a template mark the discharge spigot and mounting holes onto the surface.

3. Core cut the hole for the spigot to 100mm diameter.

4. Run suitable cable into the unit, noting the wiring should be for a fixed wired installation.

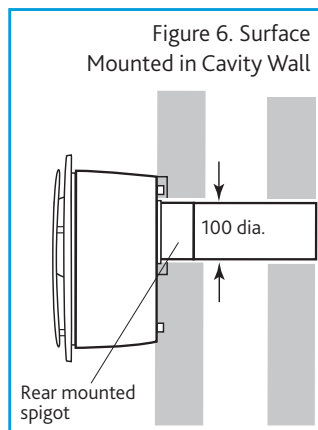
5. Run any ancillary wiring into the knock-out "square".

6. Secure the case to the surface taking care not to twist or distort the case.

7. Connect all wiring (see Section 3.0) and re-fit top section of control unit. Re-fit fan assembly and connect motors to control board. Rotate yellow clip to lock in place.

8. Complete the installation by securing the front cover and fitting any filters and test-run the unit.

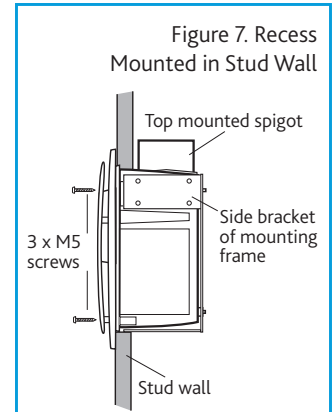
9. Adjust control settings as required.



### 2.2 Recess Mounted with Top Spigot

For applications including stud walls and ceilings that require top spigot configuration (**not suitable for Opus 95D units**).

1. Unpack the unit and components. Discard the rear spigot (040921), top spigot blank (040915) and outer casing (040915). Fit the recess flange (040919) and rear spigot blank (040917). Remove the front cover/grille and disconnect the motors from the control circuit board, noting their orientation. Rotate the yellow retaining clip and remove the fan assembly. Leaving the control unit in place, remove the top section only.



2. The unit should not be mounted directly to a partition wall / ceiling but a suitable frame should be erected to secure the mounting frame kit to (see Figure 9).

3. Run suitable cable into the unit, noting the wiring should be for a fixed wired installation.

4. Run any ancillary wiring into the knock out "square".

5. Secure the case to the frame using the machine screws provided taking care not to twist or distort the case.

6. Connect all wiring (see Section 3.0) and re-fit top section of control unit. Re-fit fan assembly and connect motors to control board. Rotate yellow clip to lock in place.

7. Complete the installation by securing the front cover and fitting any filters and test-run the unit.

8. Adjust control settings as required.

Figure 8. Fan Unit Rotated for Top Spigot Configuration (**Not Suitable for Opus 95D Units**)

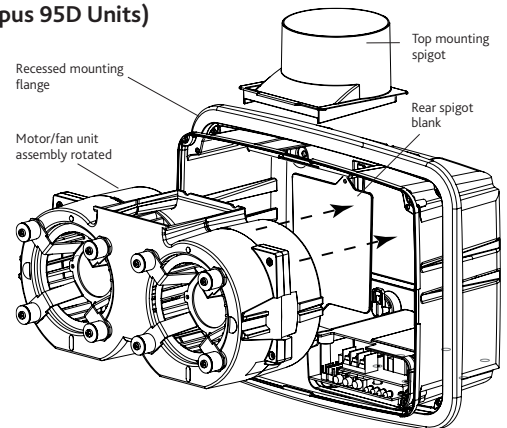
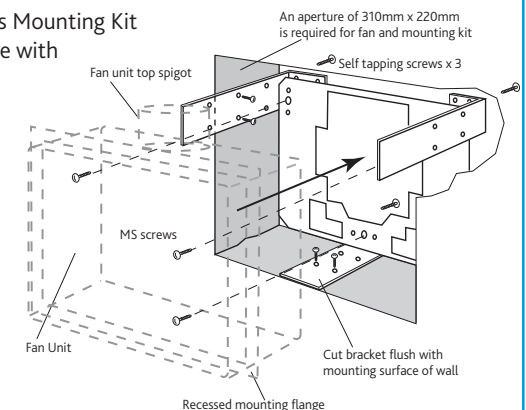


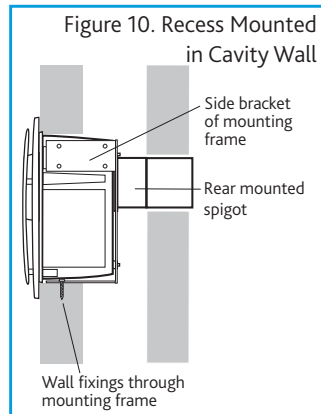
Figure 9. Recess Mounting Kit in Wall Aperture with Top Spigot Configuration



### 2.3 Recess Mounting with Rear Spigot

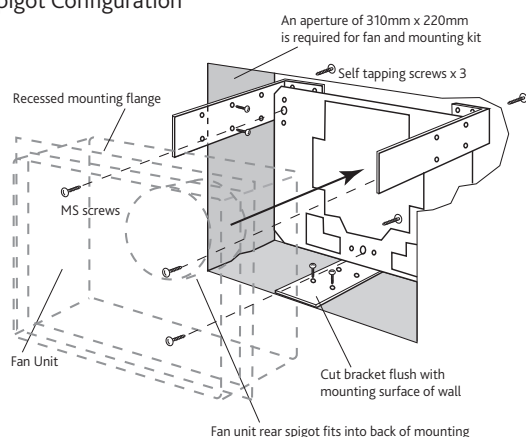
For applications including cavity walls that require rear spigot configuration.

1. Unpack the unit and components. Discard the top spigot (040918), rear spigot blank (040917) and outer casing (040915). Fit the recess flange (040919) and rear spigot (040954). Remove the front cover/grille and disconnect the motors from the control circuit board, noting their orientation. Rotate the yellow retaining clip and remove the fan assembly. Leaving the control unit in place, remove the top section only.



2. The unit should not be mounted directly to partition wall / ceiling but a suitable frame should be erected to secure the mounting frame kit to (see Figure 11).
3. Run suitable cable into the unit, noting the wiring should be for a fixed wired installation.
4. Run any ancillary wiring into the knock out "square".
5. Secure the case to the frame using the machine screws provided taking care not to twist or distort the case.
6. Connect all wiring (see Section 3.0) and re-fit top section of control unit. Re-fit fan assembly and connect motors to control board. Rotate yellow clip to lock in place.
7. Complete the installation by securing the front cover and fitting any filters, test-run the unit.
8. Adjust control settings as required.

Figure 11. Recess Mounted Frame Kit in Wall Aperture With Rear Mounting Spigot Configuration



### 3.0 ELECTRICAL CONNECTIONS

#### IMPORTANT

**Isolation - Before commencing work, make sure that the unit and Nuaire control are electrically isolated from the mains supply.**

**For good EMC engineering practice, any sensor cables or switched live cables should not be placed within 50mm of other cables or on the same metal cable tray as other cables.**

#### 3.1 Ecosmart Control

##### 3.1.1 Net Connections

The IDC plug-in connectors are provided for the connection of compatible sensors, manual controls and for linking the fans together under a common control. If more than 3 connections are required, the junction box (product code ES-JB) should be used.

NOTE: Do not run the SELV data cable in the same conduit as the mains cable and leave a 50mm separation with any power cables.

##### 3.1.2 Volt Free Relay Contacts

Note that the volt free contacts are not fused. If these are used to power any external equipment, the installer must provide adequate fusing or other protections. These contacts are rated at 5A resistive, 0.5A inductive.

##### 3.1.3 Run Connections

These contacts are closed when the fan is running.

Fault connections:

No Fault = Contacts Close

Fault = Contacts Open (Including No Power Supply to Unit)

##### 3.1.4 Data Cable Installation

A 4-core SELV data cable is used to connect devices such as sensors to the fan and for interconnecting multiple fan units. 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. Please note that 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.

##### 3.1.5 Maximum Number of Devices

The maximum number of devices (including fans) that can be connected together via the cable is 32, irrespective of their functions.

##### 3.1.6 LED Indication

PWR /	GREEN: Power on and OK,
STANDBY	RED: LED On When Fan is Not Running
Fan 1	GREEN: Fan 1 is running, RED: Fan 1 faulty.
Fan 2	GREEN: Fan 2 is running, RED: Fan 2 faulty.

#### 3.2 Basic Control

##### 3.2.1 Fault (Terminals 2 and 3)

This should only be used with optional OPUS-RFI (remote fail indicator). Connecting mains or any other device will damage the control PCB.

##### 3.2.2 LED Indication

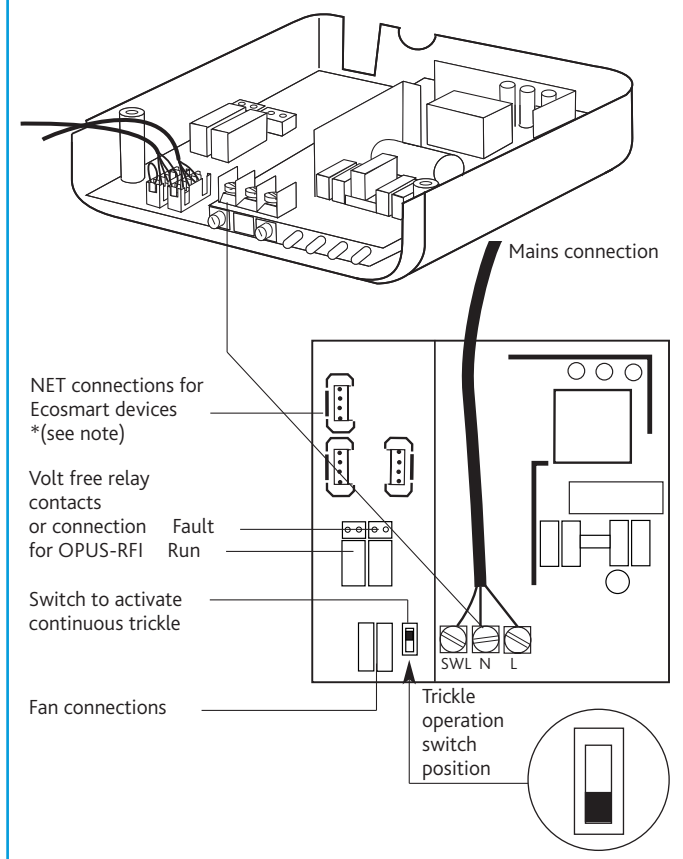
Fan 1	GREEN: Fan 1 is running, RED: Fan 1 faulty.
Fan 2	GREEN: Fan 2 is running, RED: Fan 2 faulty.

## 3.3 Electrical Consumption

Unit Size	Power Consumption (Watts)	FLC (amps)
OPUS40	14	0.11
OPUS60	43	0.32
OPUS95	72	0.60

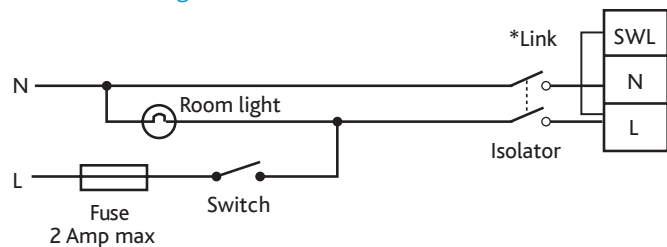
## 3.4 PCB Details

Figure 12. View Inside Electronic Control Module with Cover Removed

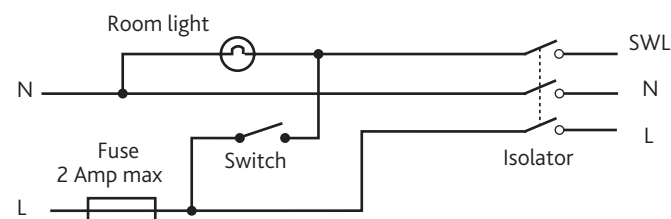


## 3.5 Wiring Details

### 3.5.1 Unit Serving One Room



### 3.5.2 Unit Serving One Room Using Run-On Timer and Enabler (Integral PIR, Humisen, ES-Humidistat etc.)



## 4.0 CONTROLS

Min speed - Used to regulate trickle speed. Can be disabled using switch (Figure 12).

Max speed - Used to regulate full speed. Adjustable.

Run-on timer - 1 to 60 minutes.

## 5.0 MAINTENANCE

### IMPORTANT

**Before any maintenance or cleaning operation, switch off the fan and disconnect from the main power supply.**

Even with optional filtered extract grilles fitted, some dust, fluff etc. will pass through the filter, and which if allowed, will build up internally on motors and impellers, shortening the life of the unit and, in severe cases, leading to overheating of the motors.

Consequently, it is strongly recommended that all units are inspected and cleaned every year.

The front cover can be removed and cleaned with water and a mild detergent using a soft cloth and the motor fan assembly can be cleaned with a dry brush or dry cloth. Ensure the unit does not come into contact with any kind of liquid or solvent. If this should occur, contact a qualified technician before reassembling the fan.

To clean the filter (if fitted), remove from the unit and wash in tepid water to which a little mild detergent has been added. Shake out the excess water and allow the filter to dry naturally, replace when dry.

### 5.1 Replacement of Parts

Should any component need replacing, Nuaire keep extensive stocks for quick delivery. When ordering spare parts, please quote the serial number of the unit and the ARC number of the purchase if possible (This information will be available on the fan label).

## 6.0 WARRANTY

The unit has a 3 year warranty. Ecosmart versions have a 5 year warranty. The warranty starts from the day of delivery and includes parts and labour for the first year. The remaining period 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 Nuaire International Sales office for further details.

## 7.0 AFTER SALES ENQUIRIES

For technical assistance or further product information, please contact the After Sales Department.

**Telephone 02920 858 400**  
**aftersales@nuaire.co.uk**

Technical or commercial considerations may, from time to time, make it necessary to alter the design, performance and dimensions of equipment and the right is reserved to make such changes without prior notice.