



# NALMOD

## Direct Drive Air Handling Units

### Installation and Maintenance

### Introduction

The NALMOD range of Air Handling units are designed for internal applications. The unit casing is manufactured from galvanised steel and acoustically lined with 25mm thick, 90kg/m<sup>3</sup> density baraf foam. There is easy access to the unit via a removable top cover and the unit can be mounted in either a vertical or horizontal plane and may arranged for either top or bottom access.

The double inlet centrifugal impeller is driven by a direct drive motor with sealed for life bearings.

Units include EU3 type filter and are available with either electric heater battery or LPHW coil.

### I.O Handling

Always handle the fans carefully to avoid damage and distortion. Care should be taken to ensure that any slings used for lifting purposes do not damage or pass through the impeller. Always check the unit weight on rating label before lifting.

### 2.0 Dimensions (mm) & Weights (kg)

Fig. 1. Unit with electric heater.

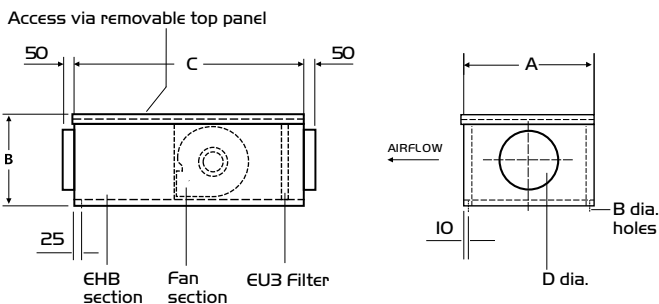
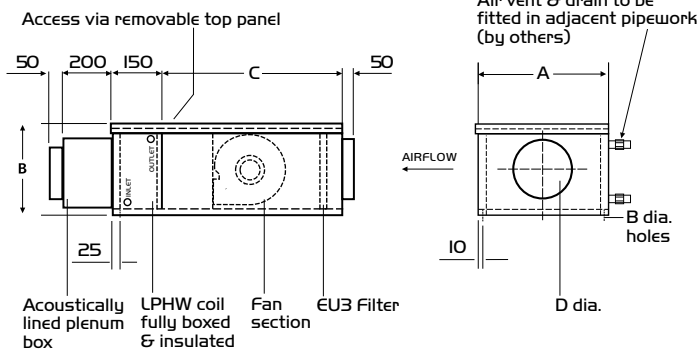


Fig. 2. Unit with LPHW coil.



Fan Code	A	B	C	D	Weight Kg
NALMODi25	400	225	550	125	29
NALMODi50	400	225	550	150	29
NALMOD200	475	335	650	200	37
NALMOD250	500	400	720	250	45
NALMOD315	550	475	770	315	49
NALMOD400	560	450	995	400	64

### Weights for LPHW coils

Size	Weight Kg
3kW	8
6kW	8
9kW	11
12kW	13
15kW	13
18kW	17
22.5kW	17

### 3.0 Installation

#### IMPORTANT

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

Installation must be carried out by a competent person in accordance with the appropriate authority and conforming to all statutory and governing regulations i.e. IEE, CIBSE, COSHE etc.

Before mains voltage is connected the resistance to earth must be measured. If found to be less than one megohms, the unit must be dried out prior to any connection being made.

Electrical connections should be made in accordance with the wiring diagram located in the terminal box or by markings on the terminal box.

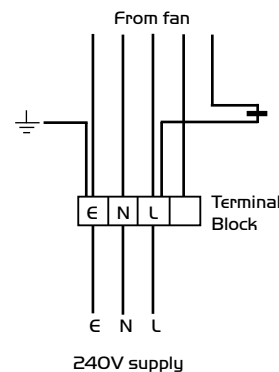
**Note: Do not use metal compression gland fittings with plastic terminal boxes.**

Fans with thermal contacts having external leads must be connected to external motor protection. This device should have a manual re-set so that automatic restarting after failure is not possible.

The unit should be installed so that vibration is not transmitted to dust systems or the frame of the building. Suitable accessories such as fast clamps and anti-vibration mounts are available. Make sure that the installation of the unit is secure and stable. Units must be installed to enable easy servicing.

### 4.0 Electrical Wiring

Fig. 3.



## IMPORTANT

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## 5.0 Water Coils

### Air Vents and Drain Plugs

These are not fitted to the coil but must be fitted in the adjacent pipe work. The air vent should be fitted at the highest point by the return connection and the drain below the flow connection. The water flow connection is on the air off side of the coil. When the coil is mounted at a high point of the system, it MUST be regularly vented, otherwise the coil may become air locked with a loss of duty.

### Winter Conditions

It is important that coils are protected against adverse weather during the winter period that may cause freezing and the danger of air being delivered at below 4.5°C. To protect the coils, a thermostat should be installed downstream of the heater and set to 4.5°C. Its action should be to either stop the fan or close outside dampers.

### Water condition

It is recommended that a check is made on the water condition to ensure that any treatment to prevent corrosion or scaling has been applied. Information relating to this can be obtained from the relevant Water Authorities particulars which can be found in the Water Engineering Handbook yearly edition.

### Run On Facility

It must be highlighted that when a heating coil is turned off it does not cool immediately. The residual heat must be dissipated by continuing to run the fan for several minutes after shutdown thus preventing damage to the coil.

## 6.0 Electric Heater Batteries

### Heaters

These are of the incolloy sheeted rod type. The surface temperature of the elements is relatively low and they will not give an electrical shock. The heater should be positioned away from materials that may be heat damaged.

### Controls

A suitable control systems should be installed which MUST include a timer to keep the fan running for a period of 2 minutes after the heater has been switched off. If a speed controller is fitted, it MUST NOT allow the fan to be turned off independently of the heater or let the face velocity fall below 1.75m<sup>3</sup>/s. If in doubt call Nuair.

### Testing

Elements are tested prior to dispatch and are within a tolerance of 7.5W.

Elements stored in damp conditions may require drying out in order to achieve the correct insulation levels.

## 7.0 Operation

Before initial operation, check the following:

- Electrical connection has been correctly completed
- Protective conductor has been connected.
- Motor protection installed.
- Safety devices in place
- Leftover installation materials and foreign materials have been removed from within casing fan.

When putting into operation, check the following:

- Connection data corresponds to the specification on the name plate.
- Maximum voltage +6%, -10% according to IEC38. Rated current must not be exceeded by more than 5% at rated voltage.

## 8.0 Inspection and Maintenance

Before maintenance, service or repair make sure that:

- Power supply is interrupted (all-pole circuit breaker)
- Fan impeller has come to a complete standstill
- Observe personnel safety regulations

The fan should be cleaned when necessary - at least once a year or more if the application dictates and this will prevent imbalance and subsequent damage to bearings.

The fan bearings are maintenance free and should only be replaced if damaged.

DO NOT use a high pressure cleaner (steam jet), water or liquids when cleaning the fan. Internal cleaning should only be performed with a dry brush or vacuum cleaner. Make sure the fan balancing weights on the impeller are not disturbed.

Check the impeller is not hindered or the motor protection triggered. If the fan does not start after it has been checked, and/or the thermal contact is reset, contact Nuair.

Filters should be inspected on a regular basis, 3 monthly is suggested, and replaced if necessary.

## 9.0 Warranty

The unit has a one year warranty. The warranty starts from the date of delivery and covers faulty materials or workmanship and includes parts and labour.

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.

## 10.0 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**

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.