

# MultiPlexBox

BALANCED AIR DISTRIBUTION FOR BOTH THE SUPPLY AND EXTRACT AIR,  
DOMESTIC RESIDENTIAL AND COMMERCIAL APPLICATIONS





## MORE THAN 60 YEARS' OF EXPERIENCE

Founded in 1955, Airflow has grown from one man's expertise in fan design and air flow measurement into a thriving international group. Renowned for its innovative approach to new product development and air movement techniques, Airflow can offer you a variety of ventilation solutions to suit your needs.

With our headquarters in High Wycombe, Airflow has subsidiaries in Germany and the Czech Republic and has global distributors from Norway to New Zealand.

Listening to the requirements of our customer enables Airflow's knowledgeable and committed staff to continually develop new and innovative products that raise standards and provide long term, reliable ventilation solutions.



### UNITED KINGDOM

High Wycombe (Head Office)

Our founder started the business in 1955, just one mile from the current site, which has been Airflow's headquarters since 1960, co-ordinating our global activities.



### GERMANY

Airflow has been serving ventilation products and air measurement devices to the German and European markets for over 50 years. Operating near Cologne, Airflow Germany has their own customer service, sales and technical sales teams.



### CZECH REPUBLIC

Founded in Prague over 20 years ago, the Airflow Czech Republic team offer sales and servicing of ventilation products for the Eastern European market.



# THE MULTIPLEXBOX FOR SMART AIR DISTRIBUTION



The MultiPlexBox offers volume flow control, sound attenuation, air distribution and a system control compatible with most central ventilation units.

Its major benefit is the demand-oriented supply and extract air volume in domestic, residential and commercial applications, ensuring a quiet, economical and efficient operation.

The MultiPlexBox has been designed to be both reliable and sustainable. The engineering of the product has allowed installation and commissioning to be as simple as possible. Service and maintenance have also been considered when developing the unit to ensure ease of access.

# THE COMPLETE SOLUTION



## A FLEXIBLE DISTRIBUTION SYSTEM DESIGNED FOR DOMESTIC, RESIDENTIAL AND COMMERCIAL VENTILATION APPLICATIONS

### **Flexibility**

The MultiPlexBox is a complete air distribution system which when used with the Airflex Pro semi-rigid ducting will provide a newly developed ventilation solution. The ducting can be simply changed from round to elliptical if needed, with an adapter.

### **High performance reliability for practical use**

The MultiPlexBox ensures fast and easy commissioning due to the reduced need to adjust the unit. Different areas in a large room can be independently ventilated and different air volumes can be supplied depending upon the demand. The MultiPlexBox will replace multiple individual components if you were to recreate what the Multiplex box can offer ( 2 x silencers, 2 x volume flow controllers, 2 x sound attenuators, air quality sensors).

### **Perfectly designed for easy service and maintenance**

The MultiPlexBox has been designed to allow for regular maintenance with ease. This ensures the unit performance is not impaired.

### **Easy to install**

The slim design of the MultiPlexBox allows for installation in the ceiling voids as well as on the wall and floor. The MultiPlexBox is a reliable air distribution system for Domestic, Residential and Commercial applications such as: Apartments, care homes and office buildings.

### **Top engineered design**

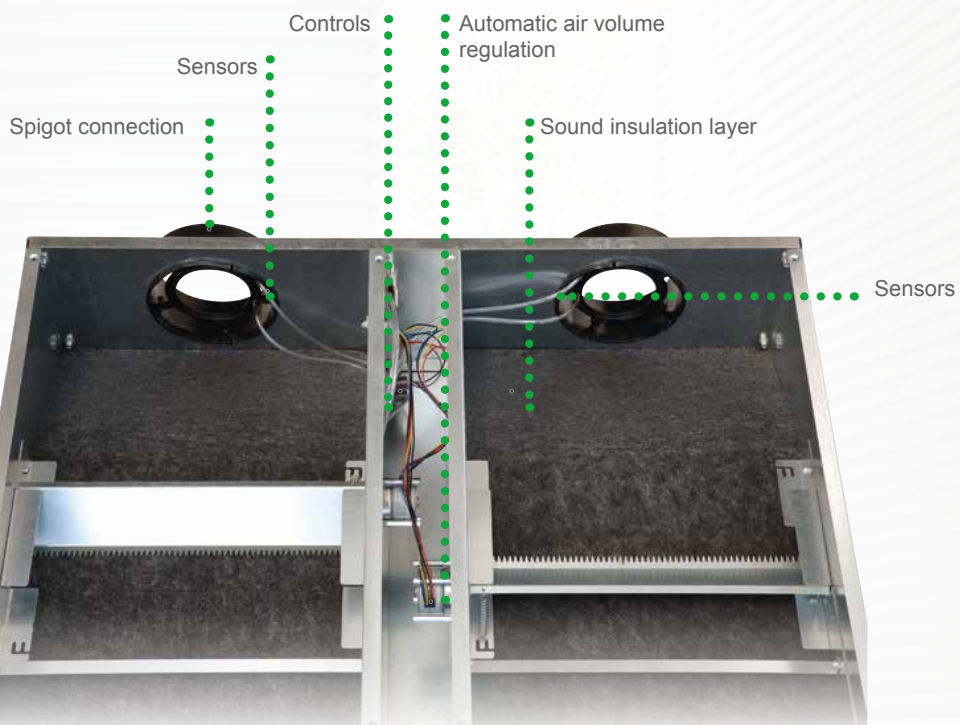
The air will optimally flow through the MultiPlexBox due to minimal designed resistance (small friction force) of the smooth inner surfaces.



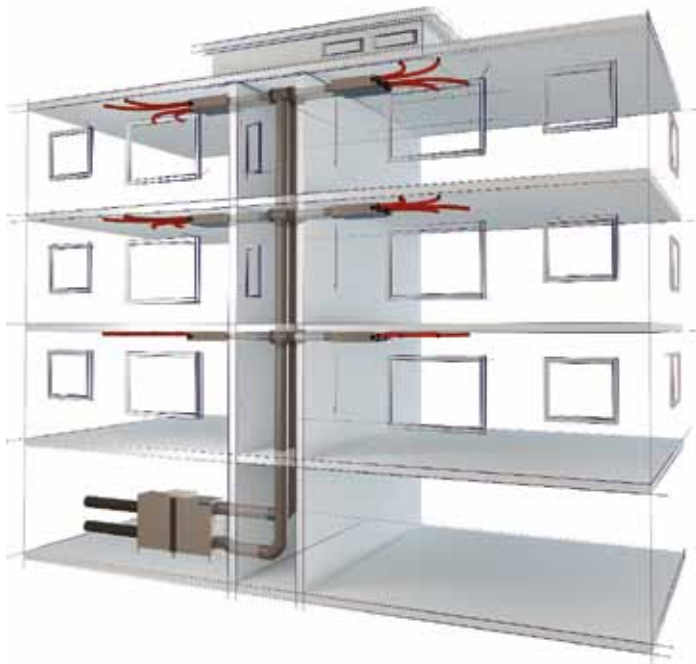
## FEATURES AND BENEFITS

- Simple design planning due to low weight and compact dimensions.
- Highly durable material with flexible properties.
- Low flow resistance and high noise attenuation.
- Fast and effortless installation.
- Airflex Pro connections are airtight due to the sealing ring design.
- Flexible mounting positions, on the floor, ceiling or wall.

## COMPONENTS



# APPLICATION

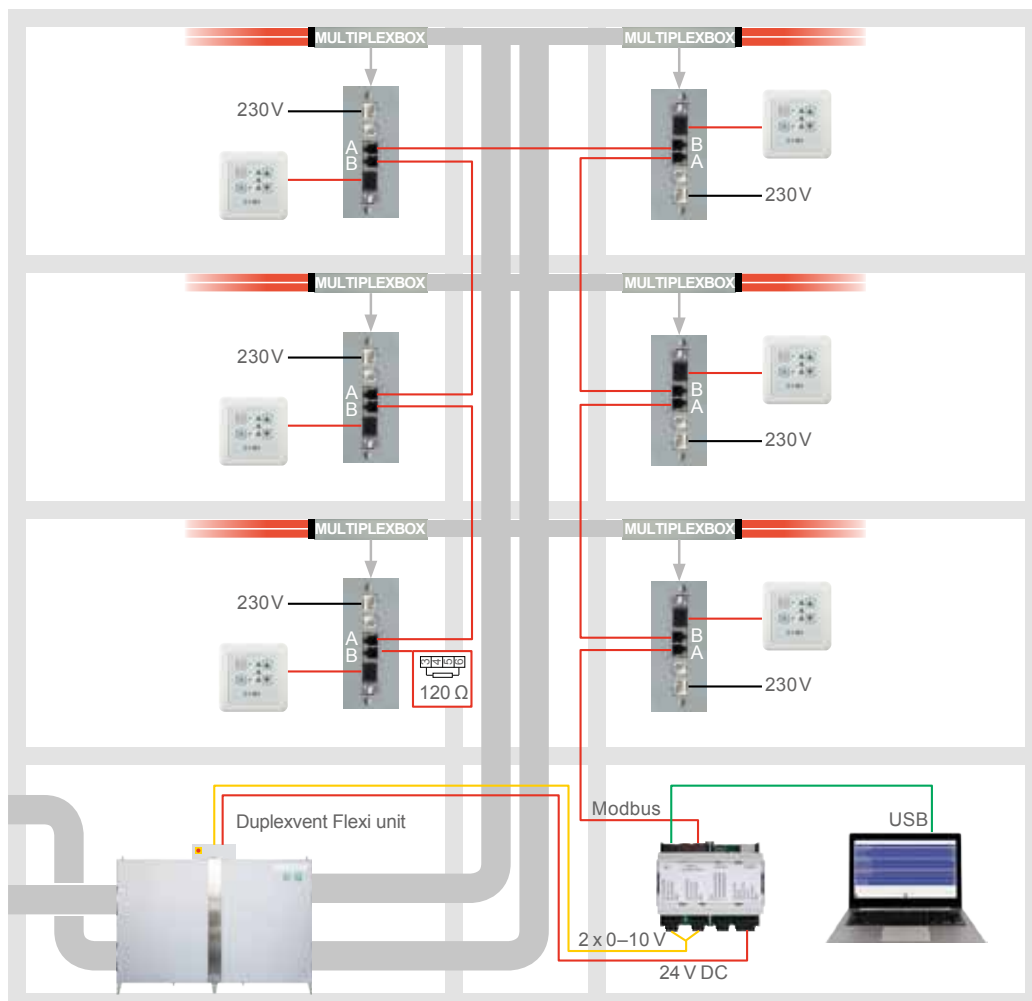


The MultiPlexBox is a great air distribution unit for blocks of flats or apartment buildings. In just one compact unit, the MultiPlexBox perfectly combines the following four features: volume flow control, virtually silent operation, efficient air distribution and demand-driven control.

The MultiPlexBox manages the ventilation of individual apartments separately optimising the total system operation.

In addition, the MultiPlexBox system is perfectly designed to work with the Duplexvent Flexi and Multi commercial MVHR (mechanical ventilation with heat recovery) units and the Airflex Pro semi-rigid ducting.

The diagram below shows the configuration of a system using the ECO Element Controller in each dwelling and a Central Controller with USB connection.



## ENGINEERED WITH YOU IN MIND

### Compatibility

Suitable for ceiling or wall installation and is compatible with Airflex Pro.

### Quick Installation

One single compact box is installed rather than numerous individual components. With its integrated mounting bracket, it is also fixed into place quickly.

### Brilliantly Quiet

The large-scale sound attenuation elements ensure silent operation. Thus, the MultiPlexBox is especially suited for noise sensitive environments.

### Maintenance Free

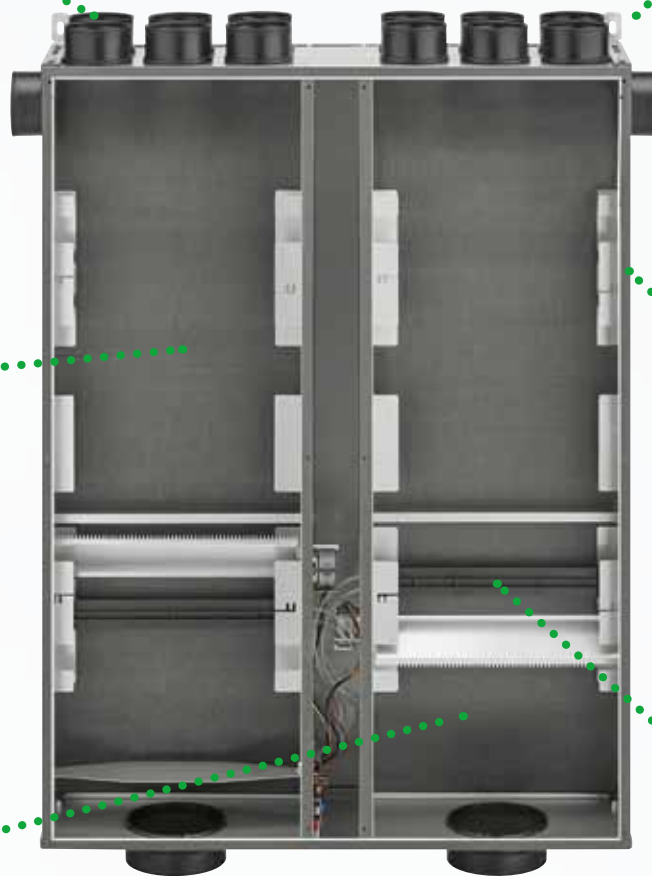
Expendable and wear parts have been avoided where possible in the design of the MultiPlexBox. However, the integrated inspection door allows for easy access.

### All Automatic

The optional room air sensors turn the MultiPlexBox into a complete demand driven ventilation unit. Manual user intervention is not required.

### Unique

The revolutionary technology safely ensures the predefined volume flow is met continuously.



# ADVANCED TECHNOLOGY



By combining four key air management features into one compact air distribution box the MultiPlexBox ensures exceptional ventilation control in maisonettes, flats and apartment blocks where the buildings ventilation requirements are supplied from a central source. The primary Mechanical Ventilation with Heat Recovery (MVHR) unit may be installed in a basement, plant room or on an enclosed roof top and ducted to each dwelling.

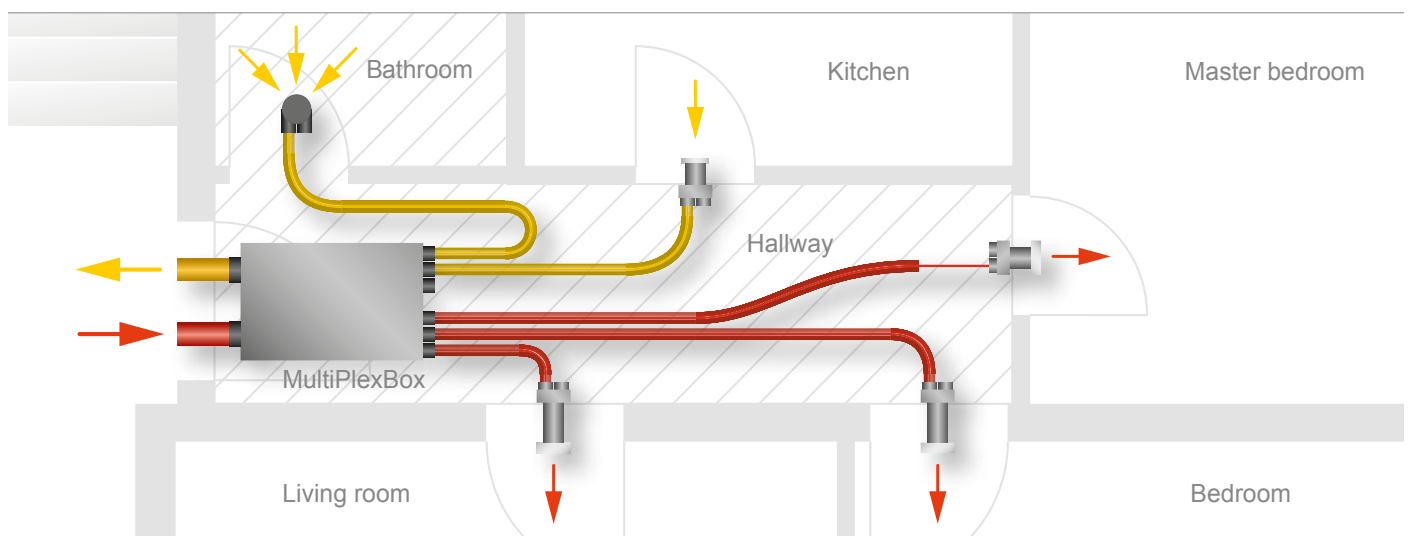
Installing a single, compact, low profile MultiPlexBox that can handle both supply and extract air centrally ducted to the apartment, enables the occupant to benefit from four key options to individually regulate their own indoor environment.

- On-demand air volume control within the home.
- Whisper silent air movement throughout the dwelling.
- Up to seven Airflex Pro supply and seven extract radial ducting room connection options for comprehensive ventilation.
- Easy to use automatic and manual wall mounted control panel options.
- Optional VOC and humidity sensor to help protect against Toxic Home Syndrome.

As each MultiPlexBox is independently controlled within the dwelling each occupant becomes self-sufficient from the central air handling unit. This means each dwelling has the flexibility of setting their own indoor ventilation preferences by the user and adjusting either manually or automatically to meet the demands of their own lifestyles.

In addition to the standard inbuilt features, an optional Volatile Organic Compound (VOC) with humidity sensor can be integrated into the box to provide an even higher level of ventilation demand control based on monitoring the indoor air quality. The personal health and wellbeing issues surrounding Toxic Home Syndrome are now well understood and this increased level of control will help mitigate the potentially harmful effects of breathing noxious gasses and airborne particulates.

The MultiPlexBox is used in conjunction with the **AIRFLEX PRO** ducting and components to provide a low energy leak free system.





# COMMISSIONING AND CONTROL



The commissioning of the MultiPlexBox is convenient and fast with its intuitive PC software:

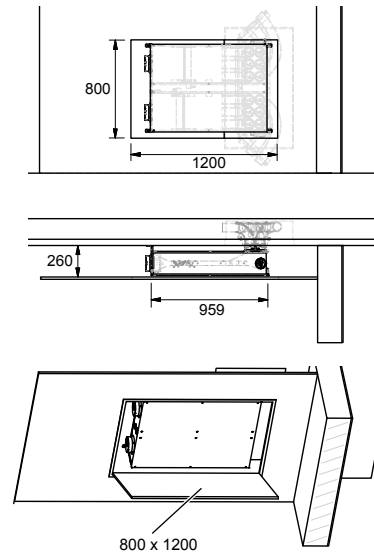
- Start software > Enter air volumes > Done!  
Complex and time consuming pressure difference measurement is eliminated.
- Individual fine-tuning: Various additional configuration options are available where required.
- Once set, the defined parameters can be saved on a PC and transferred to other boxes.

All MultiPlexBoxes can be combined in one network and centrally managed. It could not be any more convenient!

- Advanced software enables central commissioning of all MultiPlexBoxes in the network, either on-site or via the Internet.
- The Ultimate Solution: Using Multiplexboxes in conjunction with a centrally located MVHR unit, culminates in a highly efficient system. Each MultiPlexBox installation enables precise air requirement, which when adjusted is able to communicate back to the main system where airflows are internally adjusted. This reduces energy consumption of the whole system, without compromising individual needs.

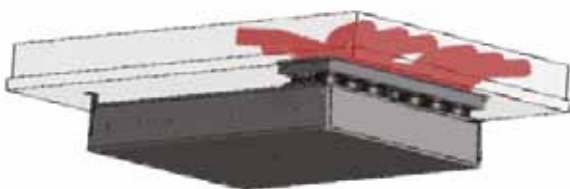
## MULTIPLYBOX INSTALLATION IN A VOID

When installing the MultiPlexBox behind a suspended ceiling or hollow wall, a service door will be required with internal dimension of 800 x 1200 mm. Depending on the application on site, it is recommended that the service door be fitted with hinges. This service door should be suitably positioned to give access to the MultiPlexBox maintenance cover.



## TYPICAL SUSPENDED INSTALLATIONS

Below are horizontal and vertical application images using the connection plate and duct support set.



# TECHNICAL DATA



Specification	MultiPlexBox
Supply Airflow	11 l/s to 61 l/s
Extract Airflow	11 l/s to 61 l/s
Volume flow	40 m <sup>3</sup> /h to 220 m <sup>3</sup> /h
Pressure loss for the MultiPlexBox @55ls	79 pa
Airflow Tolerance	+/- 4 m <sup>3</sup> /h
Maximum noise level	23 dB
Suitable for dwellings up to	230 m <sup>2</sup>
Weight	25 kg
Power Supply	230 V / 1 PH / 50 Hz
Power Consumption	6 W
Ingress protection	IP40
Setting steps	on the control panel +/-3 m <sup>3</sup> /h
Unit Supply Ports	2 x 125 Ømm
Connection Ports	
90001255	14 x 75 Ømm
90001256	14 x 75 Ømm
90001257	14 x 75 Ømm
90001258	2 x 125 Ømm

Note:

- 1 ) With a volume flow of 30 m<sup>3</sup>/h per room valve, no more than 2 x 7 room valve should be used at the same time.
- 2 ) Optional unit connections can only be used with accessories.

## Insertion attenuation (according to EN ISO 7235)

Frequency (Hz)	125	250	500	1000	2000	4000	8000
Supply Side (dB)	8	23	26	20	17	36	>40
Extract Side (dB)	8	23	25	17	15	37	>41

The insertion losses in dB, of the unit at frequency bands.

Insertion loss is the rating used to define how efficiently the unit will attenuate airborne sound.

## Sound at end of 75mm pipe

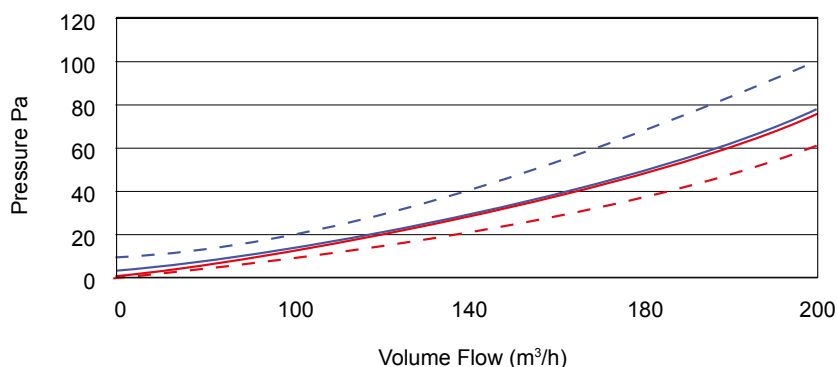
Dampner Opening %	0	0	25	50	50	75	100	100
System Pressure (Pa)	300	390	200	150	180	150	90	136
Air volume (m <sup>3</sup> /h)	61 (*3)	80 (*3)	70	132	146	160	132	160
Channel End 75mm (dB)	< 17	< 17	< 17	22	25	26	20	25

With varying levels of internal dampner opening

## Pressure

Air volume flow (m <sup>3</sup> /h)	60	100	140	180	220
90001258 Supply	9 pa	22 pa	43 pa	70 pa	100 pa
90001258 Extract	5 pa	15 pa	32 pa	53 pa	78 pa
90001257 Supply	6 pa	16 pa	32 pa	52 pa	76 pa
90001257 Extract	4 pa	12 pa	24 pa	40 pa	62 pa

Pressure of straight through and 75 mm variants of MultiPlexBox, at airflow volumes (also see graph below).



- 90001258 Supply
- 90001258 Extract
- 90001257 Supply
- 90001257 Extract

# CONTROL OPTIONS



## Sensor supported operation

Extremely convenient hands-free operation: once set, operation is always perfect.

- Sensors for demand-controlled ventilation.
- Intelligent solution for user-independent operation.
- Available as an air humidity sensor or as a combi sensor with additional VOC detection.
- Automatic and continuous assurance of the necessary air volumes.
- For direct installation in the MultiPlexBox.



## Basic Controller

A solution that is just as economical as functional for manual or automatic operation.

- Functional and discreet LED control panel in the compact switch dimensions (80 x 80 mm).
- Manual operation: Choice of four ventilation stages with freely definable air volumes.
- Automatic operation: The MultiPlexBox adjusts the air volume to the demand (using sensor, optional).
- Full power in no time at all: Activation of intensive ventilation quickly ensures the best air quality (party ventilation).



## Touch Screen Controller

High quality control with the touch screen gives more visual interaction.

- Design control panel with glass surface.
- Intuitive, manual operation: The MultiPlexBox adjusts the air volume to the demand (using sensor, optional).
- Displays all important parameters, such as the current ventilation stage and temperature.
- Creation of an individual weekly programme.



### Universal control

The universal control device is for networking different MultiPlexBoxes and a ventilation unit together. Using this technology the entire ventilation system can run in optimal conditions automatically.

The universal control device also enables the central command of up to 255 units using a single computer and significantly saves you time spent on site.

The device works by enabling the ventilation unit to control its flow rates and the MultiPlexBox to control its internal air regulation according to your local air conditions.

The system is continuously adjusted through sensors to give you the best airflow rates and offers optimal performance paired with efficient energy consumption. This also results in the reduction of sound output, as the unit will never run more than it needs to.

## SENSORS

### Air humidity sensor

Air humidity sensors are available as an accessory, this sensor serves to regulate the air volume flow depending on your rooms air humidity and thus optimises moisture protection in the room.

The sensor is contained within the unit and will operate its internal dampers automatically, opening and closing them depending on whether the room needs air.

Sensor sensitivity and operation can be set up within the commissioning software.



### Humidity & VOC Sensor

A VOC air quality and humidity sensor is available as an accessory. The Sensor is used to record and control the air quality according to the amount of undesirable VOCs in the local room air.

The VOC sensor measures volatile organic substances VOCs which come from food, furniture, carpets and other undesirable smells. The sensor filters these out of your home automatically, by communicating with the unit and opening and closing its internal dampers to increase airflow.

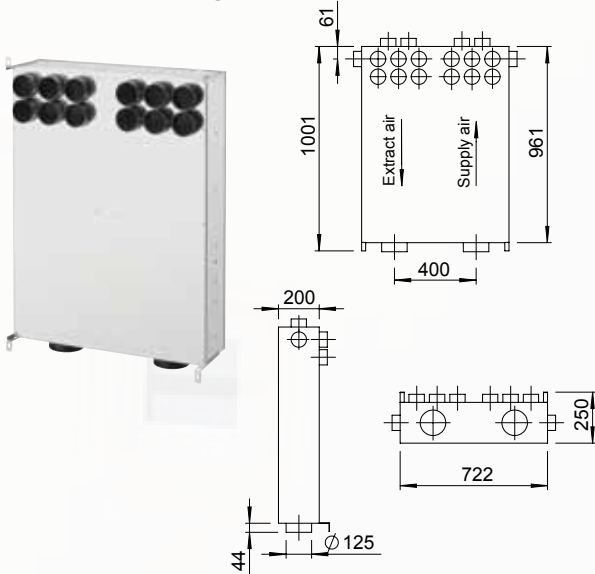
The sensitivity of the VOC and humidity sensor can be set in the commissioning software.



# DIMENSIONS

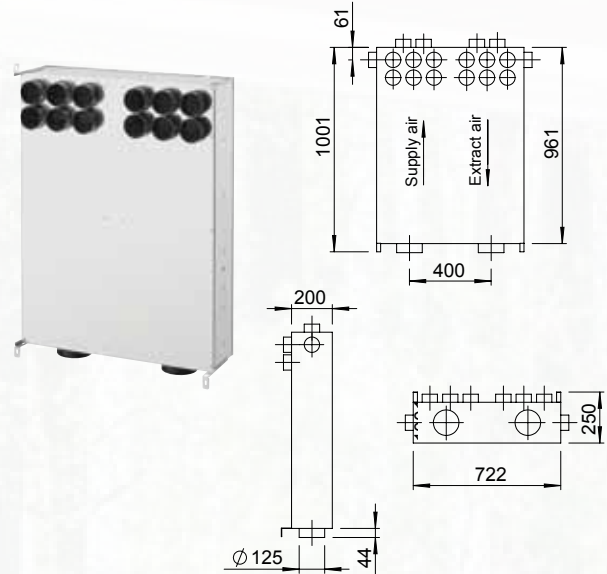


## MultiPlexBox Pro Right



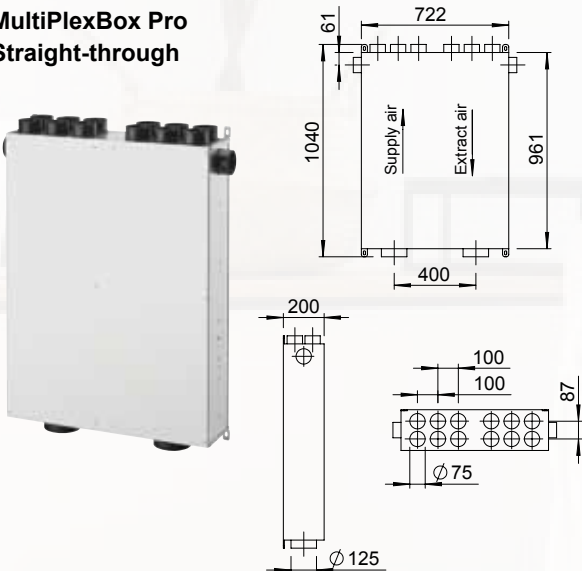
The standard 2x6 Supply and Extract Airflex Pro connections are orientated 90 degrees to the main body. 1x extra port for supply and extract is located on the side of the unit. These are facilitated by knockout points. Compact design with easy installation and maintenance. Please see above image for the individual dimensions. The supply air to the dwelling is on the right hand side in this unit as you look at the unit.

## MultiPlexBox Pro Left



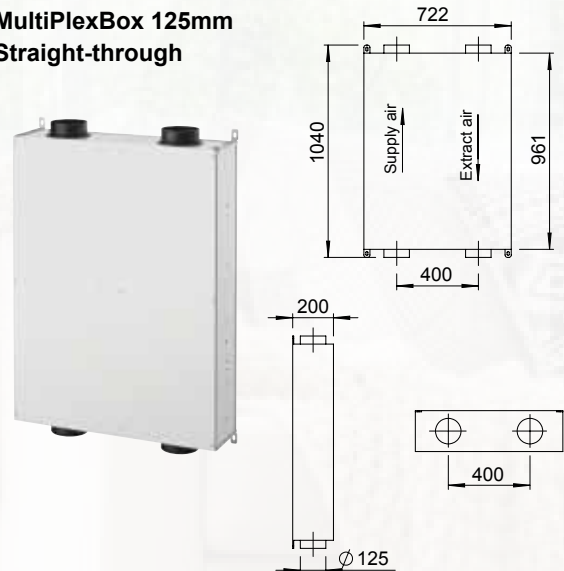
The standard 2x6 Supply and Extract Airflex Pro connections are orientated 90 degrees to the main body. 1x extra port for supply and extract is located on the side of the unit. These are facilitated by knockout points. Compact design with easy installation and maintenance. Please see above image for the individual dimensions. The supply air to the dwelling is on the left hand side in this unit as you look at the unit.

## MultiPlexBox Pro Straight-through



The standard 2x6 sets of Supply and Extract Airflex Pro connections are orientated to give straight through duct connections. 1x extra port for supply and extract is located on the side of the unit. These are facilitated by knockout points. Compact design with easy installation and maintenance. Please see above image for the individual dimensions. Unit supplied with two inspection covers, one on each side enabling the unit to be left or right handed.

## MultiPlexBox 125mm Straight-through



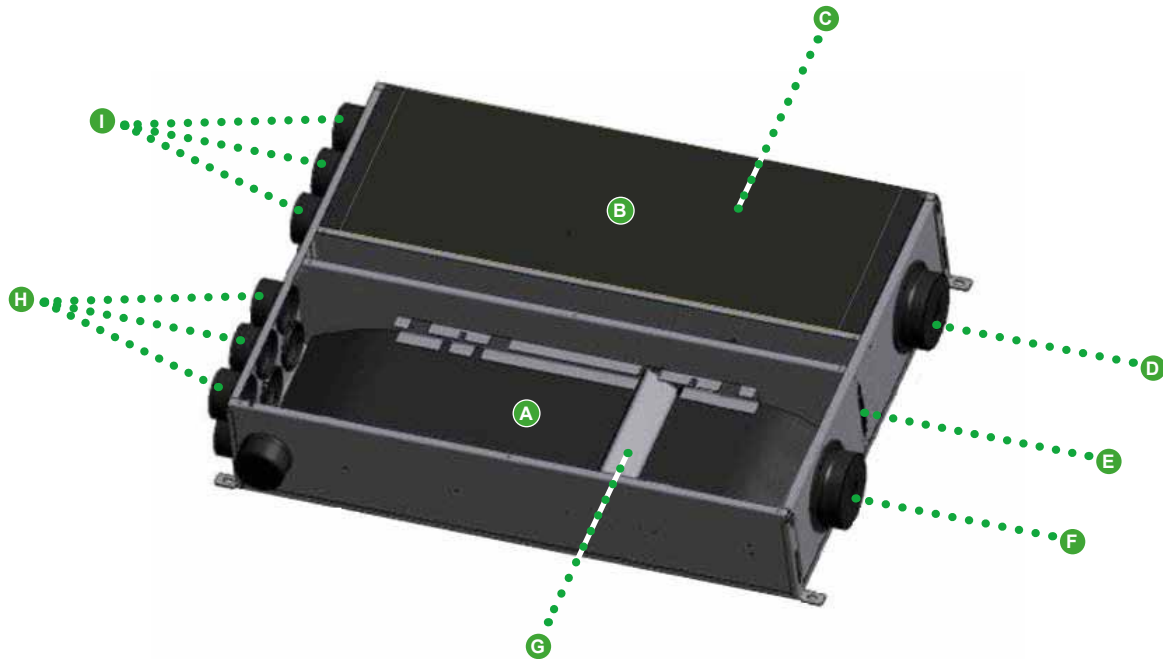
Standard 4x 125mm Ports are placed at the top and bottom of the item to give straight through duct connections. Compact design with easy installation and maintenance. Please see above image for the individual dimensions. Unit supplied with two inspection covers, one on each side enabling the unit to be left or right handed.

# INTERNAL VIEW OF THE MULTIPLEXBOX



## COMPONENTS

Below is a view of the MultiPlexBox with the sound attenuation removed from side **A**. This shows a clear view of the internal workings of the box.



## PART DESCRIPTION

<b>A</b> Supply air chamber	Chamber for circulating supply air	<b>G</b> Control Damper	Regulates how much supply air is provided by blocking off its flow automatically according to sensor input.
<b>B</b> Extract air chamber	Chamber for extracting waste air	<b>H</b> Supply connections	Ports for connecting to your supply valves
<b>C</b> Sound insulation	Protection from noise pollution	<b>I</b> Extract connections	Ports for connecting to your extract valves
<b>D</b> Exhaust air port	Removes the extracted air from the system		
<b>E</b> Control/connector	Connection for controller with ventilation regulation		
<b>F</b> Supply air port	Receives fresh supply air		

# COMPONENTS



## MultiPlexBox Pro Right



### Part Number - 90001255

Compact unit for the connection of supply and extract air

Dimensions 1001 x 400 mm

Top x 14 spigots Ø 75 mm

Suitable for use with Airflex Pro ducting

Bottom x 2 spigots Ø 125 mm

## MultiPlexBox Pro Left



### Part Number - 90001256

Compact unit for the connection of supply and extract air

Dimensions 1001 x 400 mm

Top x 14 spigots Ø 75 mm

Suitable for use with Airflex Pro ducting

Bottom x 2 spigots Ø 125 mm

## MultiPlexBox Pro Straight-through



### Part Number - 90001257

Compact unit for the connection of supply and extract air

Dimensions 1040 x 400 mm

Top x 14 spigots Ø 75 mm

Suitable for use with Airflex Pro ducting

Bottom x 2 spigots Ø 125 mm

## MultiPlexBox 125mm Straight-through



### Part Number - 90001258

Compact unit for the connection of supply and extract air

Dimensions 1040 x 400 mm

Top x 2 spigots Ø 125 mm

Bottom x 2 spigots Ø 125 mm

## Connection Set



### Part Number - 90001247

For ceiling installation with the connection plate

Set comprises 12 single duct connectors and mounting brackets

Mounting brackets and duct connectors to be used in conjunction with connection plate - part number 90001252

## Connection Plate



### Part Number - 90001252

For installation in concrete ceilings

Dim. (WxHxD)  
776 x 50 x 255 mm

2 x 6 single nozzles DN75

For direct connection of box to the ducting system in the ceiling to be used in conjunction with connection set - part number 90001247

# COMPONENTS



## Humidity Sensor



### Part Number - 90001248

Used to monitor humidity levels in the extract air and adjust the internal dampers to increase/decrease airflow

## Humidity & VOC Sensor



### Part Number - 90001249

Senses humidity and VOC levels in the extract air and adjust the internal dampers to increase/decrease airflow

## Central Controller



### Part Number - 90001246

Central control, configuration and management of all connected boxes

Networking of up to 256 boxes

Fan-optimiser function

Suitable switching power supply

## Basic Controller



### Part Number - 90001253

Manual 4 stage operation or automatic mode for a flush mount

Dim. (W x H x D)  
80 x 80 x 10 mm

4 stage with LED,  
flush mounted version

## Touch Screen Controller



### Part Number - 90001254

Glass touch display for controlling and configuring the boxes

Dim. (W x H x D)  
110 x 93 x 19 mm

99 mm display  
flush mounted version

## Duct Support Set



### Part Number - 90001250

Duct support sets for bilateral connection of Airflex Pro

Set consists of 2 connection plates each supporting 7 connections

Keeps ducting apart and off the building fabric reducing noise transmission and thermal bridging



# COMPONENTS

## Duct Support Set



**Part Number - 90001251**

Duct support set  
for one-sided connection of  
Airflex Pro

Set consists of 1 connection plate  
supporting 13 connections

Keeps ducting apart and off the  
building fabric reducing noise  
transmission and thermal bridging

## Airflex Pro Round Ducting



**Part Number - 9041130**

50 mm coil (round)  
Dimensions 75 mm O/D

## Airflex Pro Round Clip



**Part Number - 90000352**

Airflex Pro round duct clip  
Sold in packs of 10

## Sealing Rings



**Part Number - 9041133**

Airflex Pro round sealing rings  
Sold in packs of 10

Dimensions 75 mm O/D

## Blanking caps



**Part Number - 90001260**

Airflex Pro Round connection/  
blanking cap

Supplied as a set of 2 and fits all  
versions of the MultiPlexBox

Dimensions 75 mm O/D

## Round Rigid Ducting



Airflow has a large range of  
125 mm round rigid components to  
complement the 125 mm straight  
through MultiPlexBox.

The details and part numbers are  
available on our web site  
[www.airflow.com](http://www.airflow.com)

# COMMERCIAL MVHR COMPATIBLE WITH MULTIPLEXBOX

## Duplexvent Flexi



### **DUPLEXVENT®**

A range of five centralised commercial heat recovery units with a flow rate up to 1484 l/s (5342 m³/h) at 200 Pa. Suitable for commercial and industrial applications, these units are available in a range of sizes and configurations.



## Duplexvent Multi eco



### **DUPLEXVENT®**

An eleven unit, side entry range of MVHR, with a flow rate up to 3083 l/s (11100 m³/h) at 200 Pa. Customisable to the projects specification, these units are very versatile.



## Duplexvent Multi eco V



### **DUPLEXVENT®**

Six MVHR units with top entry access. These indoor units have a flow rate up to 3083 l/s (11100 m³/h) at 200 Pa. Suitable for commercial and industrial applications these units are customisable to the projects specification.

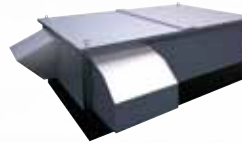


## Duplexvent Multi eco Roof



### **DUPLEXVENT®**

An eight unit range with a flow rate up to 3083 l/s (11100 m³/h) at 200 Pa. These units are suitable for outdoor installation, on the roof of buildings, where space inside the building is minimal.



## Duplexvent Rotary



### **DUPLEXVENT®**

Seven indoor MVHR units that utilise a rotary wheel heat exchanger. The range has a flow rate up to 4444 l/s (16000 m³/h) at 200 Pa.



## Duplexvent Rotary Roof



### **DUPLEXVENT®**

Seven MVHR units with a flow rate up to 4000 l/s (14400 m³/h) at 200 Pa. The Rotary Roof range is suitable for outdoor installations on top of buildings where room internally is short for space.



# FIELD SUPPORT

## Field support



Airflow do not view any of our customers as a short-term arrangement. We believe that by working together in partnership we can achieve better results in realising our shared objectives to deliver efficient, effective and reliable ventilation solutions.

Our knowledgeable, trained technicians can provide support to ensure your ventilation project runs smoothly and where issues arise, they can advise on the most suitable course of action to provide a successful outcome.

Airflow offers full field support across the UK and are supported by an internal technical team offering help and support for any issues or queries.



## Contact us



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