Effective condensation Control

With Positive Input Ventilation



Installation, maintenance & user manual

Applicable for the following AIRPLUS PIV models:

PRODUCT CODE	DESCRIPTION
AF 90-AP-STD	AIRPLUS
AF 90-AP-EHB	AIRPLUS PH

brookvent@co.uk

AIRPLUS and AIRPLUS PH

Whole-house positive input ventilation unit

Read this manual carefully before using the product and keep it in a safe place for reference as necessary.
The product was designed in compliance with regulations relating to electrical equipment and must be installed by technically qualified personnel.
The manufacturer assumes no responsibility for damage to persons or property resulting from failure to observe the instructions contained in this manual.

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2. WARNINGS AND PRECAUTIONS

WARNING

Make sure that the mains supply to the unit is disconnected before performing any installation, service, maintenance, or electrical work!

The installation and maintenance of the unit and ventilation system must be performed by an authorized installer in accordance with local regulations.

If any abnormality in operation is detected, disconnect the device from the mains supply and contact a qualified technician immediately.

2.1. Transport and storage

- Do not leave the device exposed to atmospheric agents (rain, sun, snow, etc.).
- Duct connections must be covered during storage and installation.

2.2. Installation

- After removing the product from its packaging, verify its conditions. Do not leave the packaging within reach of children or people with disabilities.
- Beware of sharp edges. Use protective gloves.
- The device should not be used as an activator for water heaters, stoves, etc., nor should it discharge into hot air/fume vent ducts deriving from any type of combustion unit or tumble dryer.
- If the environment in which the product is installed also houses a fuel-operating device (water heater, methane stove etc.) that is not a “sealed chamber” type, it is essential to ensure adequate air intake, to ensure good combustion and proper equipment operation.
- If the supply duct is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid creating a hazard.
- The electrical system to which the device is connected must comply with local regulations.
- Before connecting the product to the power supply or the power outlet, ensure that:
  - the data plate (voltage and frequency) corresponds to those of the electrical mains.
  - the electrical power supply/socket is adequate for maximum device power.
- An omni polar switch should be incorporated in the fixed wiring, in accordance with the wiring rules, to provide a full disconnection under overvoltage category III conditions (contact opening distance equal to or greater than 3mm).
- Ensure adequate air infiltration into the room in compliance with existing regulations in order to ensure proper device operation.
- Install the product so that the impeller is not accessible from the air outlet side as verified by contact with the Test (test probe “B” of the norm EN61032) in compliance with the current safety regulations.

2.3. Use

- The device should not be used for applications other than those specified in this manual.
- This appliance can be used by children aged 8 years old and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.
- Do not touch the appliance with wet or damp hands/feet.
- The device is designed to intake clean air only, i.e. without grease, soot, chemical or corrosive agents, or flammable or explosive mixtures.
- Do not use the product in the presence of inflammable vapors, such as alcohol, insecticides, gasoline, etc.

- The system should operate continuously, and only be stopped for maintenance/service.
- Do not obstruct ducts or grilles to ensure optimum air passage.
- Do not immerse the device or its parts in water or other liquids.
- Operating temperature: 0°C up to +40°C.

2.4. Maintenance

- Even if the mains supply to the unit has been disconnected there remains a risk of injury due to rotating parts that have not come to a complete standstill.
- Beware of sharp edges. Use protective gloves.
- Use original spare parts only for repairs.

3. PRODUCT INFORMATION

3.1. General information

AIRPLUS and AIRPLUS PH are loft mounted ultra-quiet, low energy, low maintenance, home ventilation units. The units are designed to help ventilate a home using the well-established Positive Input Ventilation (PIV) principle. PIV units have been preventing and curing condensation and dampness related problems in homes for decades. They are also used to control other indoor air pollutants and have even proven to be an effective means for reducing Radon gas.

Another benefit of PIV systems is that they do not require any additional ducting.

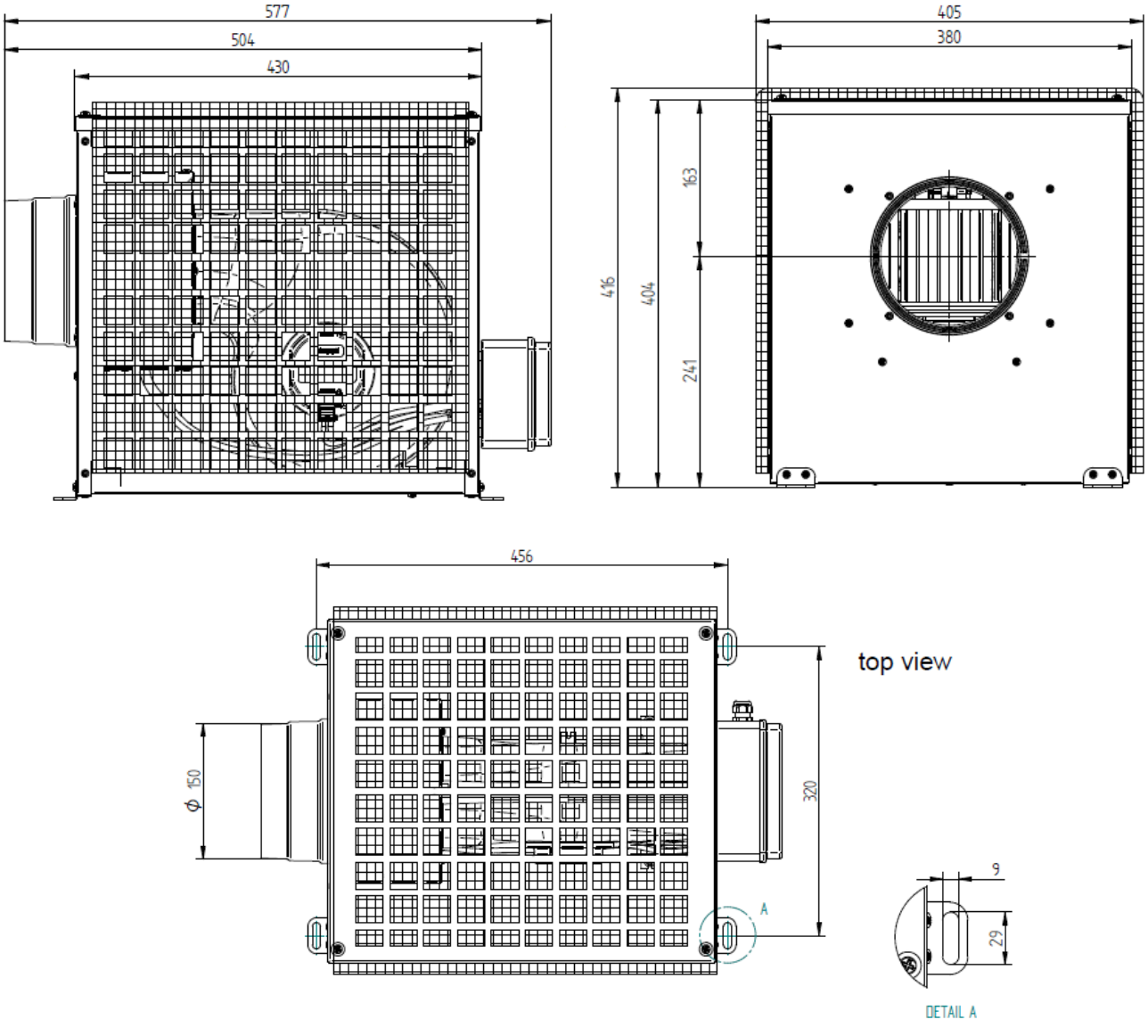
The AIRPLUS and AIRPLUS PH units are suitable for floor or ceiling installation.

3.2. Dimensions [mm] and Weight [kg]

Dimensions:

AIRPLUS and AIRPLUS PH share the same external dimensions:

Weight: AIRPLUS- 9kg; AIRPLUS PH- 9kg



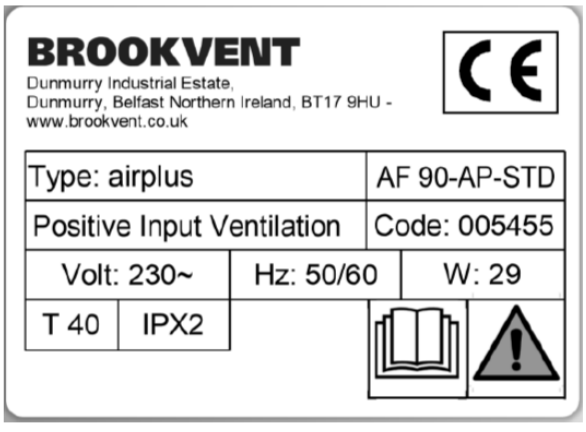
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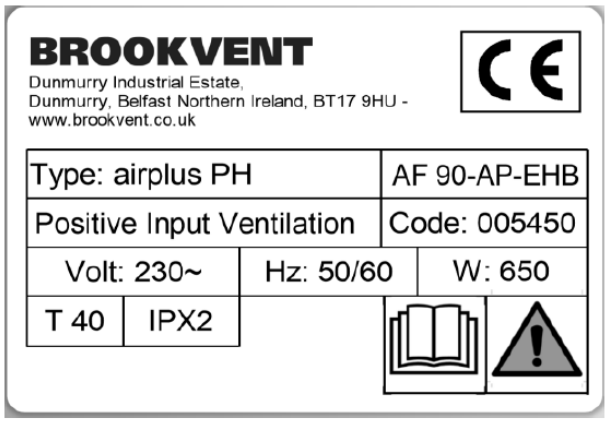
3.3. Space required

Please ensure that there is at least 150 mm clear of obstructions around the unit to allow easy maintenance (access to filters and terminal box).

3.4. Rating labels

Fuse rating required: 5A fuse





4. TRANSPORT AND STORAGE

WARNING
Make sure that specific warnings in Chapter 2 are carefully read, understood, and applied!

The unit is delivered in one cardboard box.

The unit should be stored and transported in such a way that it is protected against physical damage that can harm spigots, casing etc.

It should be covered so that dust, rain, and snow cannot enter and damage the unit and its components.

5. INSTALLATION

WARNING
Make sure that specific warnings and cautions in Chapter 2 are carefully read, understood, and applied!

This section describes how to install the unit correctly. The unit must be installed according to these instructions.

5.1. Unpacking

Verify that the unit (and accessories) delivered is according to order before starting the installation. Any discrepancies from the ordered equipment must be reported to the supplier.

5.2. Where/how to install

- AIRPLUS and AIRPLUS PH units are meant for indoor installation only.
- Mount the unit on a flat surface.
- It's important that the unit is completely level before it is put into operation.
- When choosing the installation location, it should be kept in mind that the unit requires regular maintenance and therefore easy access.
- Leave free space for repair or replacement of components.

5.3. What is in the box

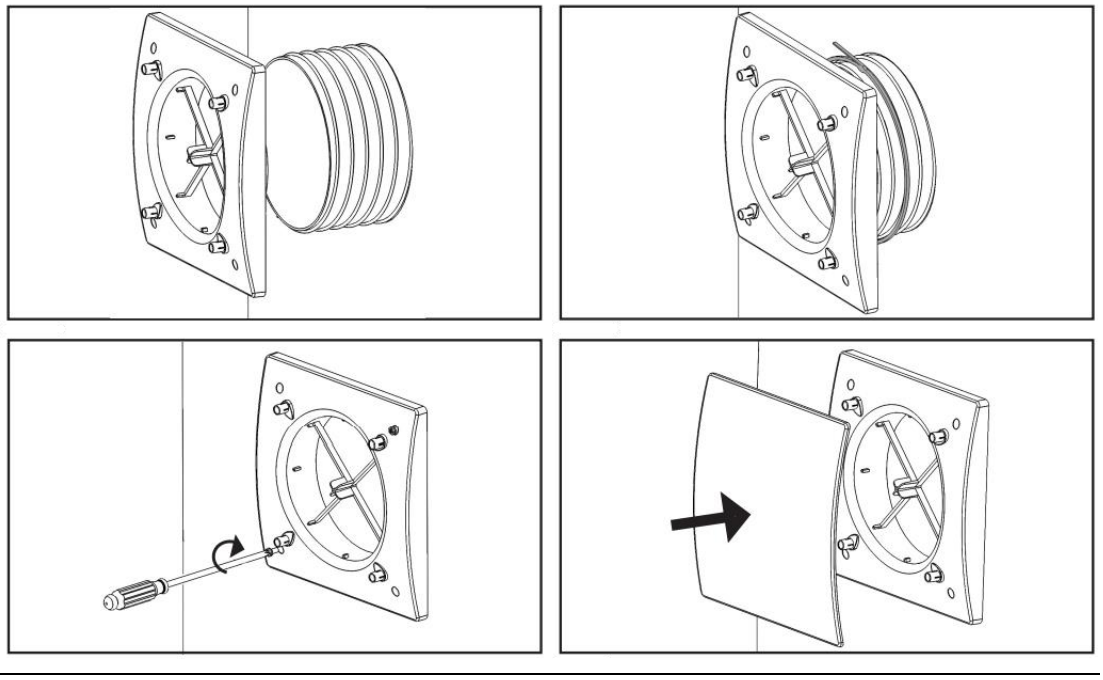
AIRPLUS	AIRPLUS PH
- AIRPLUS unit - manual - metal clamps - filter - diffuser - mylar flap - duct - screws + wall plugs	- AIRPLUS PH unit - AIRPLUS PH controller - manual - metal clamps - filter - diffuser - mylar flap - duct - screws + wall plugs

5.4. Diffuser Installation

When fitting the diffuser near a smoke alarm the provided blanking plates must be fitted to avoid blowing air over the smoke alarm and affecting its operation. The provided standard diffuser is not suitable for installation in dwellings 3 storeys and above or in fire protected areas.

Installing the diffuser requires cutting a 150mm diameter opening in the ceiling connecting the loft with the rest of the dwelling in which the diffuser can be mounted. The diffuser has to be mounted within reach of the provided ducting from the AIRPLUS unit.

When installing AIRPLUS and AIRPLUS PH models the flexible duct should be the shortest possible. Alternatively, a thermal insulated duct can be used.

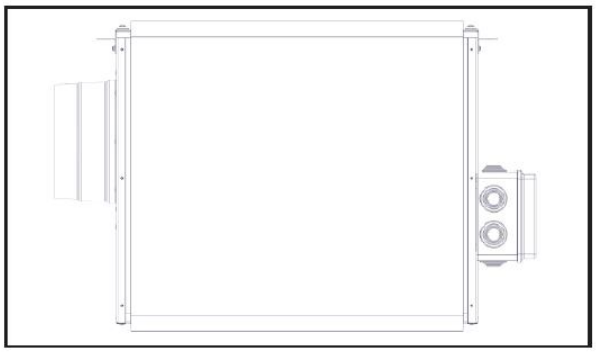


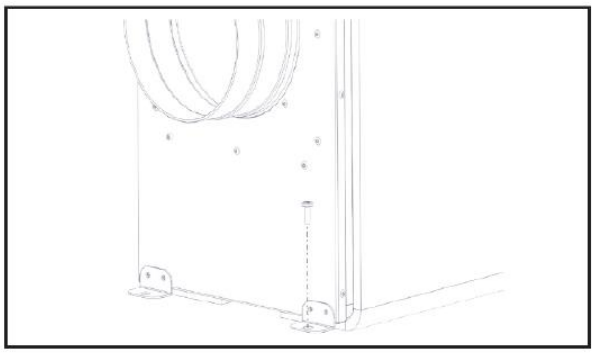
5.5. Installation

The unit needs to be secured using screws suitable for the material the units is being mounted on.

Secure the flexible ducting to the unit and the diffuser using strapping provided.

Ensure that flexible ducting is pulled tight and is not damaged. This might affect the unit's performance.





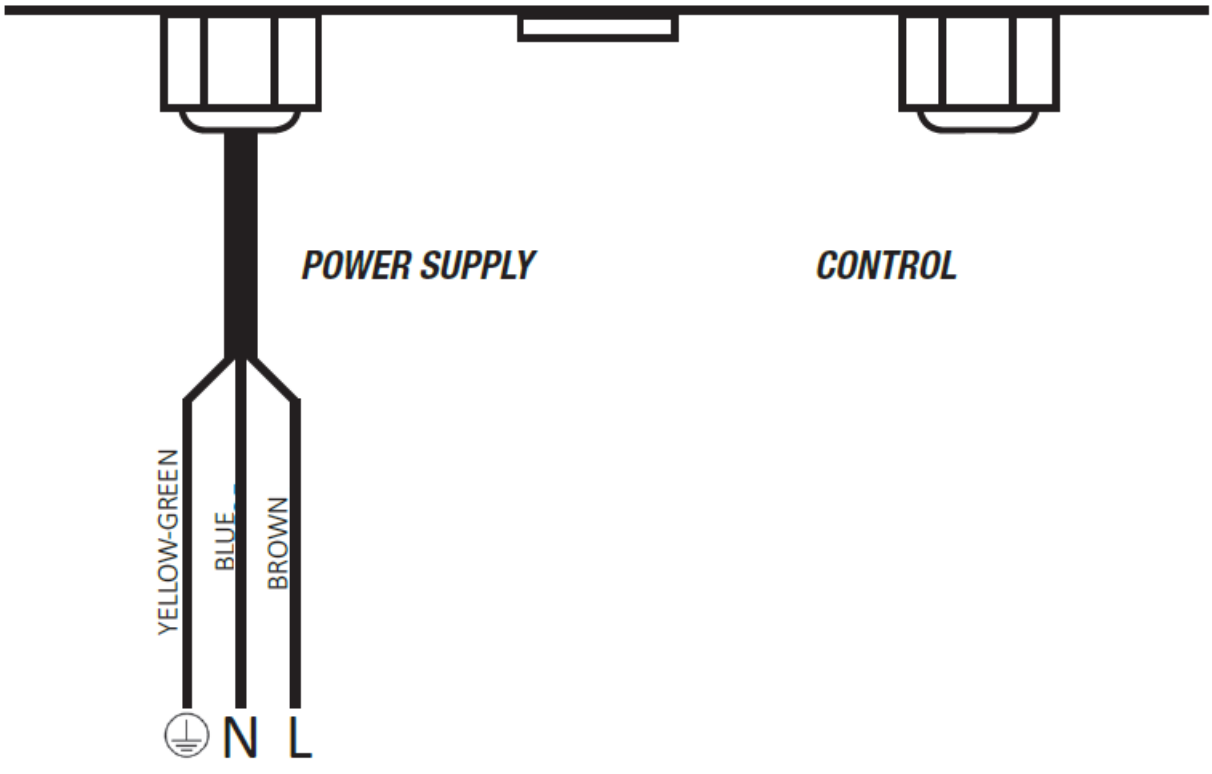
6. AIRPLUS WIRING, COMMISSIONING AND OPERATIONS

6.1. Precabled electric connections AIRPLUS

ATTENTION
Make sure that the mains supply to the unit is disconnected before performing any installation, service, maintenance or electrical work! The installation and service of the unit and complete ventilation system must be performer by an authorized installer and in accordance with local rules and regulations.

The **AIRPLUS** unit is delivered wired (see below).

The unit must be earthed.

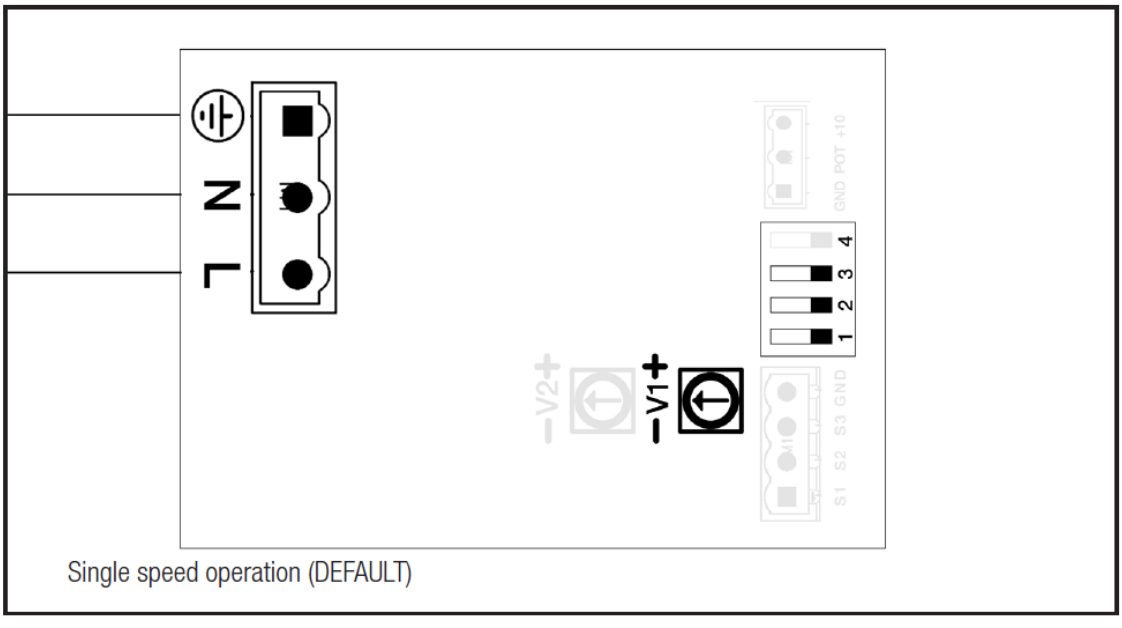


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6.2. Electric wiring diagrams

6.2.1. Single speed operation

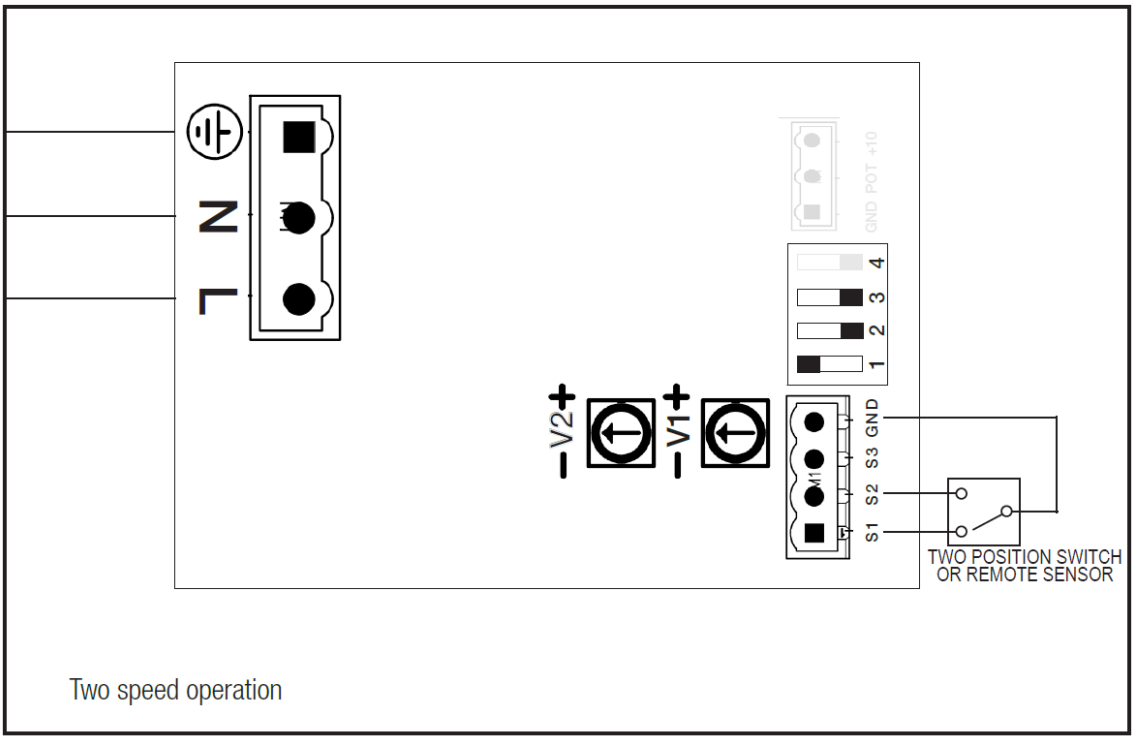
The unit runs at the speed set by turning the “V1” trimmer in the terminal box. This is a default factory setting.



Single speed operation (DEFAULT)

6.2.2. Two speed operation

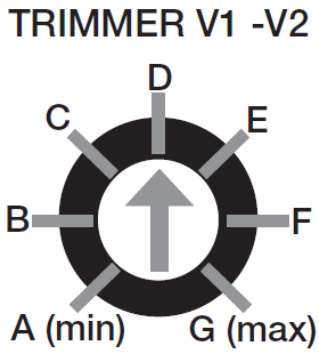
The unit runs continuously at the speed set by turning the “V1” trimmer in the terminal box and can be boosted to a higher speed which is set using the “V2” trimmer also located in the terminal box. Boost speed is activated by means of a remote two-position switch (not supplied).



Two speed operation

6.2.3. Speed setting. Trimmer and Dip Switches

Trimmer Position	m³/h	l/s	W
A (min)	97	27	4
B	140	39	6
C	184	51	9
D	216	60	14
E	241	67	20
F	270	75	25
G (max)	288	80	29



1	2	3	4	Operation
0	0	0		Single speed
1	0	0		Two speed

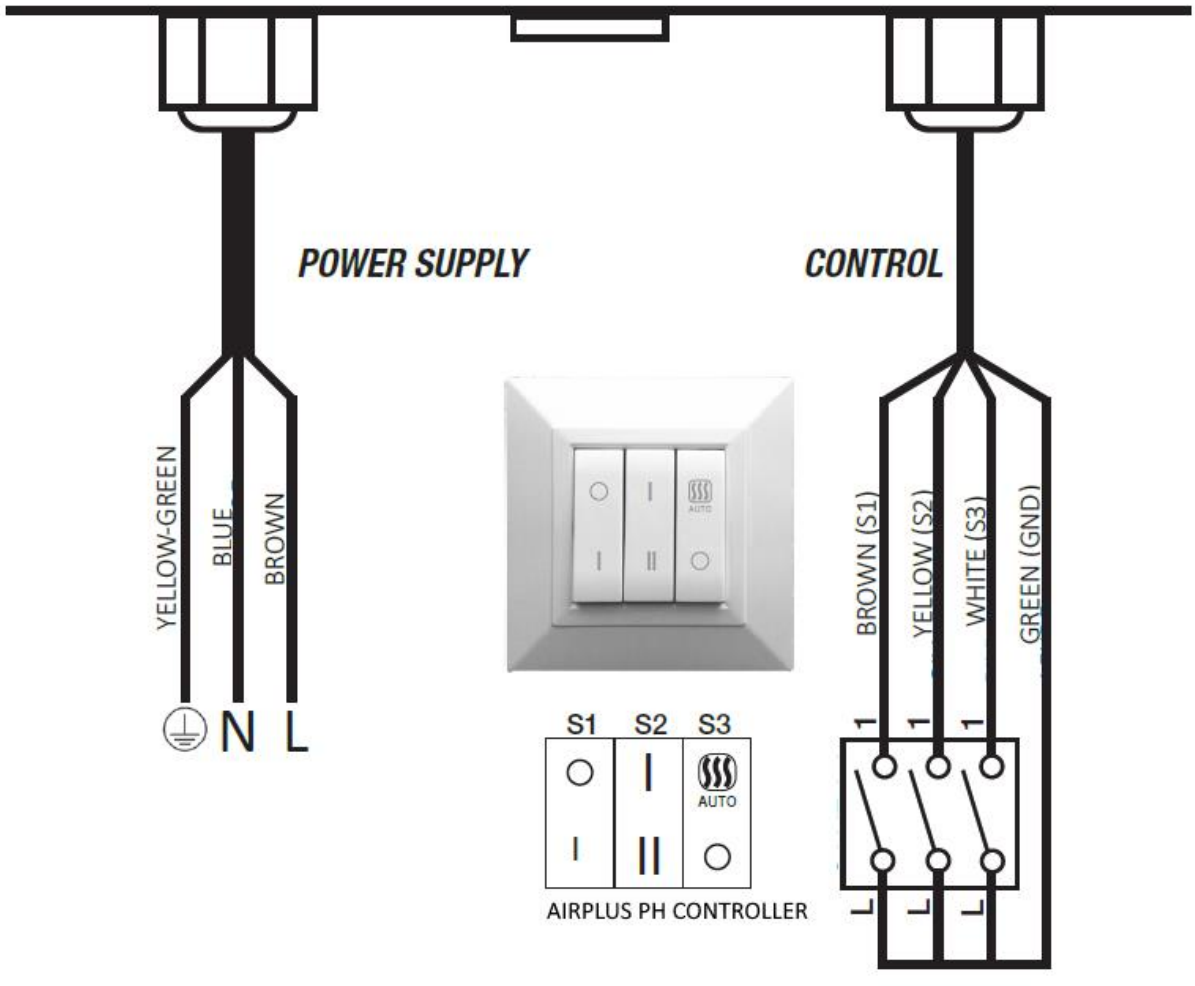
7. AIRPLUS PH WIRING, COMMISSIONING AND OPERATIONS

7.1. Precabled electric connections AIRPLUS PH

ATTENTION
Make sure that the mains supply to the unit is disconnected before performing any installation, service, maintenance or electrical work! The installation and service of the unit and complete ventilation system must be performer by an authorized installer and in accordance with local rules and regulations.

The **AIRPLUS PH** unit is delivered wired (see below).

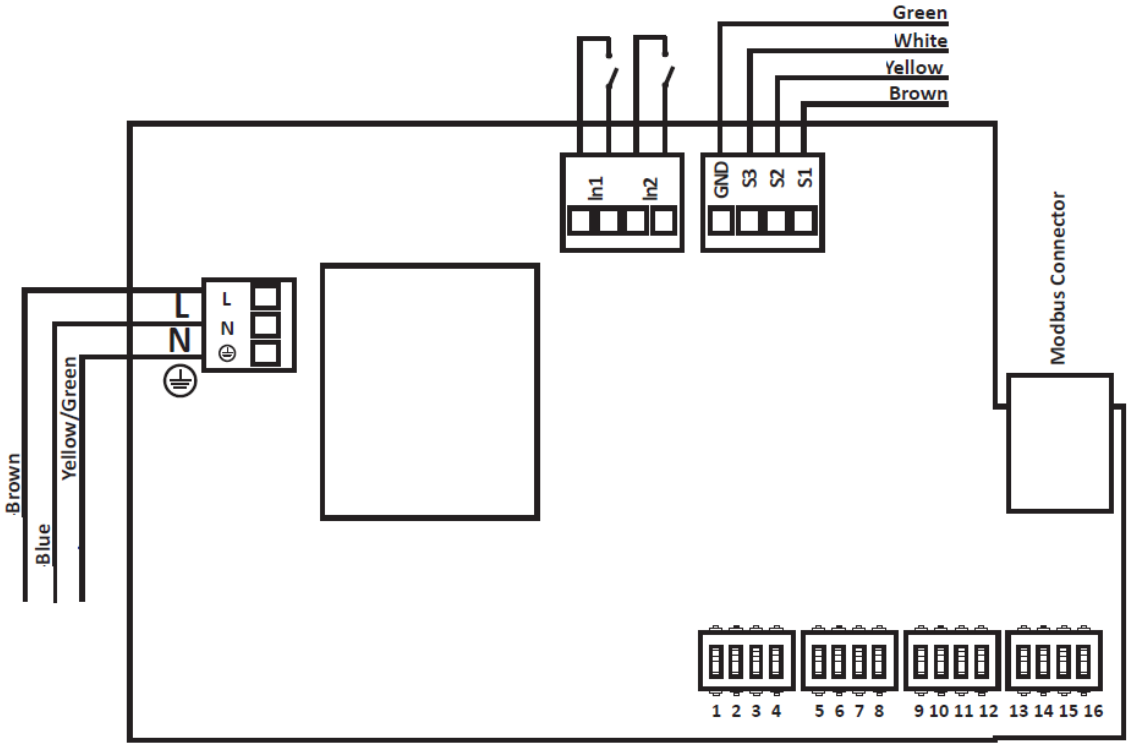
The unit must be earthed.



7.2. Internal wiring diagram

The units must be earthed. The units are wired internally by the manufacturer Graphs below presents the wiring diagram.

AIRPLUS PH internal wiring diagram



Above: Electrical connections on the motherboard fitted in the terminal box.

7.2.1. Continuous running speed

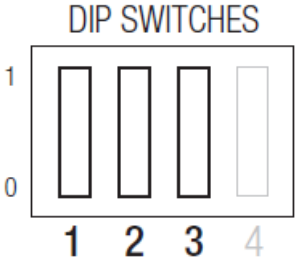
The unit will run at the continuous running speed until:

a) the integrated temperature sensor switches it to “Heat Recovery” or “Summer Stand by” modes

b) it is manually switched to high speed, using a controller (for example the dedicated AIRPLUS PH controller provided with that version of the unit)

To set the continuous running speed use dip switches 1-2-3.

DIP1	DIP2	DIP3	Low speed	
			m³/h	l/s
0	0	0	104	29 (default)
0	0	1	61	17
0	1	0	76	21
0	1	1	90	25
1	0	0	119	33
1	0	1	133	37
1	1	0	148	41
1	1	1	162	45

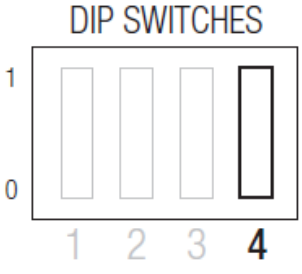


7.2.2. Maximum speed

The maximum speed can be activated by means of a controller (for example the dedicated AIRPLUS PH controller provided with that version of the unit)

To set the maximum speed use dip switch 4.

DIP4	Maximum speed	
	m³/h	l/s
0	252	70
1	216	60



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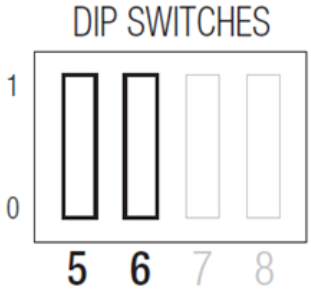
7.2.3. Heat recovery mode (intermediate speed and temperature threshold)

When the air temperature in the loft is above the set trigger threshold level, the unit will automatically switch to an increased speed. The trigger temperature threshold can be set using dip switches 5-6. It is usually adjusted to slightly above the temperature the home is heated to.

For example: the low speed is set at 104 m3/h and the intermediate speed is set in configuration 01 (+20%), when triggered the intermediate speed will be 104+20,8=124,8m3/h.

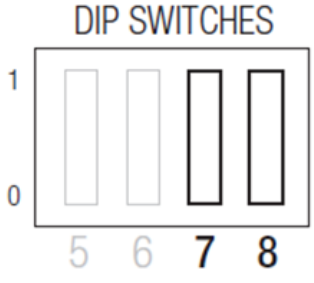
DIP5	DIP6	Intermediate speed increase (%)
0	0	0* (default)
0	1	+20*
1	0	-20*
1	1	-40*

* % of increase compared to the low speed.



To set the temperature threshold for the heat recovery mode use the dip switches 7-8.

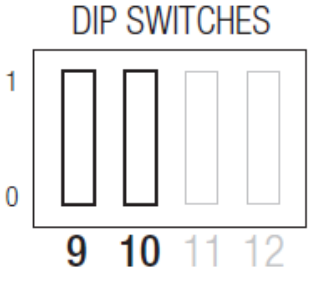
DIP7	DIP8	Thr (°C)
0	0	19 (default)
0	1	21
1	0	23
1	1	25



7.2.4. Summer Stand-by mode (trigger temperature threshold)

When the air temperature in the loft raises above a trigger temperature threshold, the unit will switch off to prevent the undesirable warm air being introduced unnecessarily to the home. The trigger temperature threshold can be set using the dip switches 9-10.

DIP9	DIP10	Tss (°C)
0	0	26 (default)
0	1	30
1	0	35
1	1	40

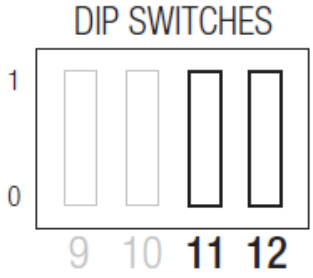


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7.2.5. Heater (threshold)

The unit is fitted with a heater that tempers incoming air when required. The heater is an anti-condensation heater and is not intended to be used to heat the dwelling. The desired temperature can be set using dip switches 11-12.

DIP11	DIP12	Theat (°C)
0	0	10 (default)
0	1	13
1	0	15
1	1	18



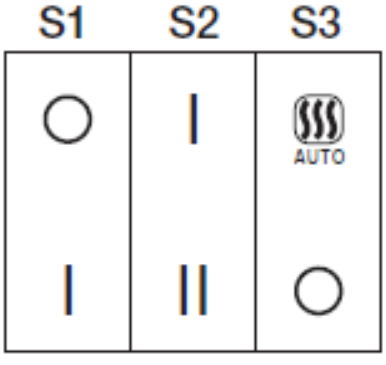
7.2.6. 2 speed operation via the AIPLUS PH controller

(Controller supplied only with AIRPLUS PH version)

S1 switch: the unit can be switched on (I) or off (O).

S2 switch: the continuous running (low) speed is activated by pressing position I; the maximum speed is activated by pressing position II.

S3 switch : it activates the automatic operation of the heating element (AUTO) or deactivate it completely (O).



7.2.7. Modbus control

The unit can be controlled via Modbus (Modbus RTU over RS485). For specification, contact our customer service.

8. MAINTENANCE

WARNING
Make sure that the mains supply to the unit is disconnected before performing any installation, service, maintenance or electrical work!

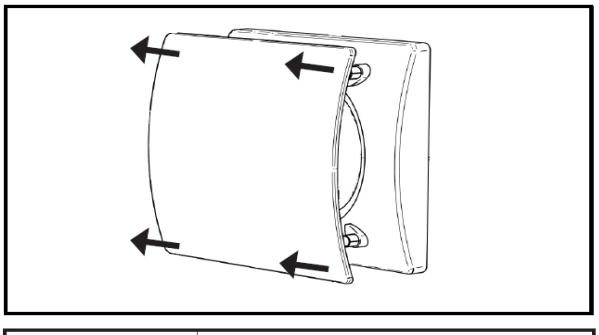
Filter needs to be checked annually and cleaned with vacuum cleaner.

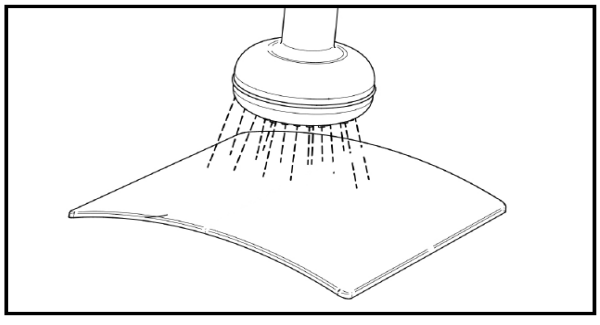
Their maintenance may differ per situation depending on the environmental conditions.

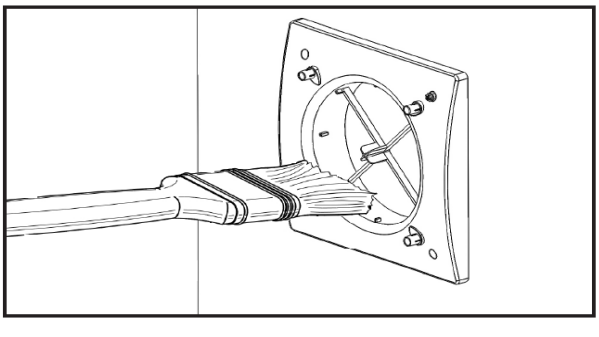
Filters must be replaced according to the “filter change period” indication below.

Low speed		Filter Change Period
m^3/h	l/s	Years
104	29 (default)	7,5
61	17	10
76	21	10
90	25	9
119	33	6,5
133	37	6
148	41	5,5
162	45	5

Cleaning the diffuser







9. MAINTENANCE/CLEANING REGISTER

	FILTER CLEANING	FILTER REPLACEMENT
DATE		
DATE		
DATE		
DATE		
DATE		
DATE		
DATE		
DATE		

DISPOSAL AND RECYCLING



Information on disposal of units at the end of life.
This product complies with EU Directive 2002/96/EC.
The symbol of the crossed-out dustbin indicates that this product must be collected separately from other waste at the end of its life. The user must, therefore, dispose of the product in question at suitable electronic and electro-technical waste disposal collection centres, or else send the product back to the retailer when purchasing a new, equivalent type device.
Separate collection of decommissioned equipment for recycling, treatment and environmentally compatible disposal helps to prevent negative effects on the environment and on health and promotes the recycling of the materials that make up the equipment.
Improper disposal of the product by the user may result in administrative sanctions as provided by law.

10. ErP Directive - Regulations 1253/2014 - 1254/2014

a)	Mark	-	**BROOKVENT**	
b)	Model	-	**AIRPLUS**	**AIRPLUS PH**
c)	SEC class	-	C	C
c1)	SEC warm climates	kWh/m2.a	-10,6	-10,5
c2)	SEC average climates	kWh/m2.a	-25,0	-24,8
c3)	SEC cold climates	kWh/m2.a	-50,1	-49,9
	Energy label	-	No	
d)	Unit typology	-	Residential - unidirectional	
e)	Type of drive	-	Multi-speed drive	
f)	Type of Heat Recovery System	-	Absent	
g)	Thermal efficiency of heat recovery	%	%	%
h)	Maximum flow rate	m3/h	288	251
i)	Electric power input at maximum flow rate	W	29	650
j)	Sound power level (L_{WA})	dBA	43	43
k)	Reference flow rate	m3/h	202	176
l)	Reference pressure difference	Pa	10	10
m)	Specific power input (SPI)	W/m3/h	0,059	0,068
n1)	Control factor	-	0,65	0,65
n2)	Control typology	-	Local demand control	
o1)	Maximum internal leakage rate	%	N/A	
o2)	Maximum external leakage rate	%	N/A	
p1)	Internal mixing rate	%	N/A	
p2)	External mixing rate	%	N/A	
q)	Visual filter warning	-	N/A	
r)	Instructions to install regulated grilles	-	check the instruction booklet	
s)	Internet address for pre/disassembly instructions	-	www.bookvent.pl	
t)	Airflow sensitivity to pressure variations	%	10%	10%
u)	Indoor/outdoor air tightness	m3/h	101	79
v1)	AEC - Annual electricity consumption - warm climates	kWh	0,5	0,6
v2)	AEC - Annual electricity consumption - average climates	kWh	0,5	0,6
v3)	AEC - Annual electricity consumption - cold climates	kWh	0,5	0,6
w1)	AHS - Annual heating saved - warm climates	kWh	11,9	11,9
w2)	AHS - Annual heating saved - average climates	kWh	26,2	26,2
w3)	AHS - Annual heating saved - cold climates	kWh	51,3	51,3

11. Notes

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