

# PHS MEV-H

## CONTINUOUS MECHANICAL EXTRACT VENTILATION UNIT

### INSTALLATION MANUAL



\* Read this manual carefully before using the product and keep it in a safe place for reference.  
This product was constructed up to standard and 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 regulations contained in this booklet.

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## 1.0 Precautions for installation, use and Maintenance

1. The device should not be used for applications other than those specified in this manual.
2. After removing the product from its packaging, verify its condition. In case of doubt, contact a qualified technician. Do not leave packaging within the reach of small children or people with disabilities.
3. Do not touch the appliance with wet or damp hands/feet.
5. Do not use the product in the presence of flammable vapours, such as alcohol, insecticides, gasoline, etc...
6. If any abnormalities in operation are detected, disconnect the device from the mains supply and contact a qualified technician immediately. Use original spare parts only for repairs.
7. The electrical system to which the device is connected must comply with local regulations and must be examined and tested by a qualified electrician.

8. Before connecting the product to the power supply or the power outlet, ensure that: - the data plate (voltage and frequency) correspond to those of the electrical mains - the electrical power supply/socket is adequate for maximum device power. If not, contact a qualified technician.
9. Operating temperature: 0°C up to +40°C.
10. The device is designed to extract clean air only, i.e. without grease, soot, chemical or corrosive agents, or flammable or explosive mixtures.
11. Do not leave the device exposed to the atmosphere (rain, sun, snow, etc.).
12. Do not immerse the device or its parts in water or other liquids.
13. Turn off the main switch whenever a malfunction is detected or in case of cleaning/maintenance.
14. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
15. Do not obstruct the fan or exhaust grille and ensure optimum air passage.
16. Ensure adequate air return into the room in compliance with local regulations in order to ensure proper device operation.
17. If the environment in which the product is installed also houses a fuel-operating device (fireplaces, stoves etc., that is not a “sealed chamber” type), it is essential to ensure adequate air intake, to ensure good combustion and proper equipment operation.
18. Make sure there is enough space around the unit for maintenance.

## 2.0 Introduction

The PHS MEV is a whole house mechanical extract fan designed to be connected to ceiling extracts valves as per buildings regulations part F. Suitable for above ceiling, false-ceiling or floor installation, horizontally or vertically. This version is with integral humidistat.

## 3.0 Technical Specifications

1. Outer fan casing manufactured from powder coated galvanised sheet steel.
2. Top cover made from strong ABS plastic.
3. Internal self-extinguishing acoustic foam lining.
4. EC external rotor motor for energy saving, mounted on ball bearings that guarantee a longer product life cycle and suitable for cold climates.
5. Forward curved centrifugal impeller to provide a smooth and silent airflow through the unit.
6. Provided with multiple extract points:
  - a. air exhaust to outside -through 1xØ125mm circular spigot
  - b. air extract from inside -through 4xØ125mm circular spigots.
7. IPX2 protection.
8. Power supply 230V~ 50/60Hz.

Model	Airflow m <sup>3</sup> /h max	Static Pressure Pa max	Power W max	Sound Pressure dB(A) @3m
PHS MEV	380	219	36	27

## 4.0 Operation

### Single speed operation

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

Wiring diagram: Fig. 5A - Dip switch configuration: **0000** (Fig. 5F).

### Two speed operation

The unit runs continuously at the speed set by turning the integral trimmer “V1” in the terminal box and can be boosted at high speed, which is set by turning the integral trimmer “V2” in the terminal box.

Boost is activated, when needed, by means of a remote two-position switch (not supplied) or by means of remote sensors SEN-PIR which is available on request.

Wiring diagram: Fig. 5B - Dip switch configuration: **1000** (Fig. 5F).

### Variable speed operation with CTRL remote manual controller (accessory on request)

The unit runs at the speed set by turning the knob of the CTRL remote manual control panel (accessory, Fig. 6). Wiring diagram: Fig. 5C - Dip switch configuration: **0100** (Fig. 5F).

### Variable speed operation through a domotic (BMS) system or ballast potentiometer.

The unit runs at the speed set by turning the knob of an external 1-10V ballast potentiometer or set by an external 1-10V signal from a domotic (BMS) system.

Wiring diagram: Fig. 5D - Dip switch configuration: **0110** (Fig. 5F).

### Three speed operation with SEL speed selector (accessory on request).

The unit runs at the speed selected by turning the knob of the SEL speed selector (See figure 7.) Speed 1 is set by turning the integral trimmer “V1” in the terminal box.

Speed 2 is set by turning the integral trimmer “V2” in the terminal box.

Speed 3 is the maximum speed achievable by the unit.

Wiring diagram: Fig. 5E - Dip switch configuration: **1000** (Fig. 5F).

### Humidity Control Functions

Whatever is the chosen operation and the speed setting, when the humidity threshold is reached, the fan speed is increased by 15%.

When the humidity level returns below the threshold, the fan continues to run at increased speed for a pre-set period of time.

Humidity threshold is adjustable from 50% to 95% via trimmer HY (Fig. 5G). To deactivate the humidistat function, turn the trimmer HY completely clockwise (position G).

**NOTE: Dip switch number 4 should always be in “0” position to enable humidistat function.**

## 5.0 Maintenance

Make sure the mains supply of the unit is disconnected before performing any maintenance. The maintenance must be carried out by a qualified technician and in accordance with local rules and regulations.

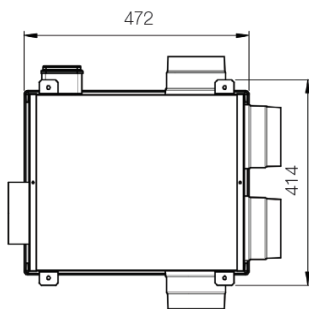
## 6.0 Disposal and recycling



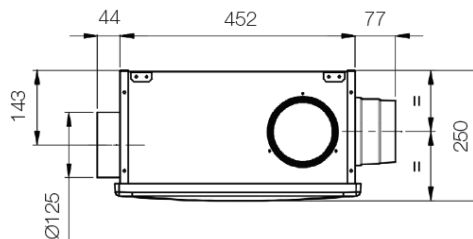
This product complies with EU Directive 2002/96/EC. The symbol of the crossed-out dustbin indicates that this product must be collected separately from other waste at the end of its life. The user must, therefore, dispose of the product in question at suitable electronic and electro-technical waste disposal 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.

## 8.0 Dimensions

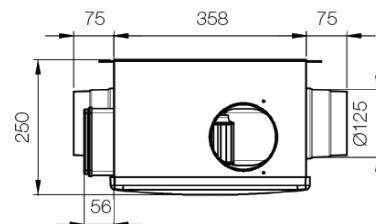
**Weight = 6.4kg**



Bottom View



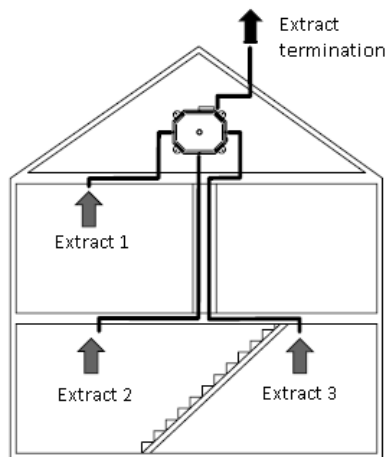
Side Elevation



Side Elevation

## 9. Installation and Commissioning

- Locate the unit in any of the following locations:
  - Loft space
  - False ceiling
  - Cupboard
- Ensure there are allowance made to remove the top cover and easy connection of the various pipes.
- The unit must be screwed to a secure base. The extract points duct runs should be well planned, any ducting outside on the warm envelope needs to be insulated. Fit a suitable low resistance external extract termination (e.g. a suitable roof vent or fixed louvre grill)
- Fit adjustable extract valves in the chosen room locations.
- The pipe dimensions and room flow rates shall be designed by Passive House Systems engineers.



Ductwork should be fitted in accordance with the Domestic Ventilation Compliance Guide and follow any system designs that have been produced for the property/

Ductwork to atmosphere or through unheated spaces should be insulated.

For efficiency, all ductwork should be as large a diameter as possible.

Inline filters should be fitted and maintained to prevent soiling of the ducts.

- f) With the mains supply isolated, wire the unit to the local isolator in accordance with local regulations.
- g) All maintenance and building works should be complete before commissioning this MEV unit. This will avoid any major disturbance to the installation or high volumes of dust or debris being drawn into the system. Do not commission the MEV unit until it is fully installed including power, ductwork, internal valves and external vents.
- h) MEV systems must be commissioned in accordance with Approved Document F of the Building Regulations. Further good practice and advice for the installation of MEV systems can be found in the latest edition of the Domestic Ventilation Compliance Guide for England and Wales. For MEV commissioning guidance in other countries, please refer to the relevant local Building Regulations for that country.
- i) Determine the required ventilation rates. For guidance see Approved Document F of the building regulations.
- j) Fully open all extract valves then measure the air flow rate at all system extract points using a calibrated air flow meter capable of measuring in l/s or m<sup>3</sup>/hr.
- k) Add the extract rates from all rooms together then compare this value to the calculated whole building (boost) extract ventilation rate.

## 10. Electrical Wiring



**The unit must be earthed**

Figure 5A Single Speed Operation

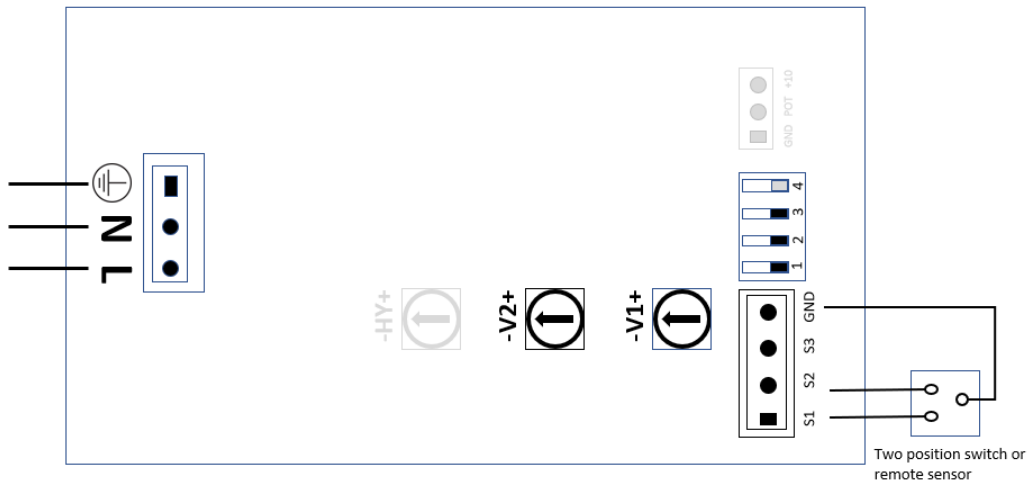


Figure 5B Two speed operation

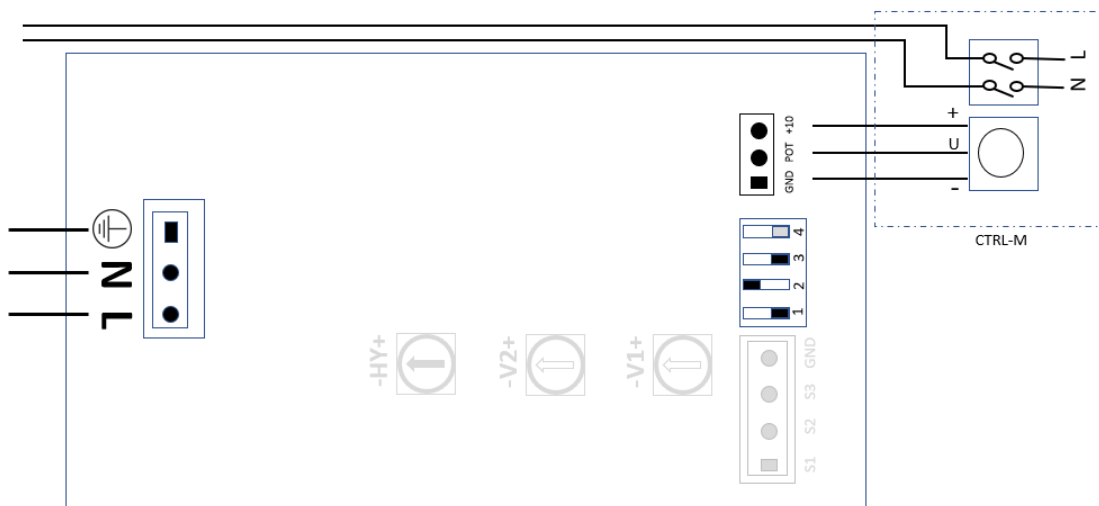


Figure 5C Variable speed operation with manual controller

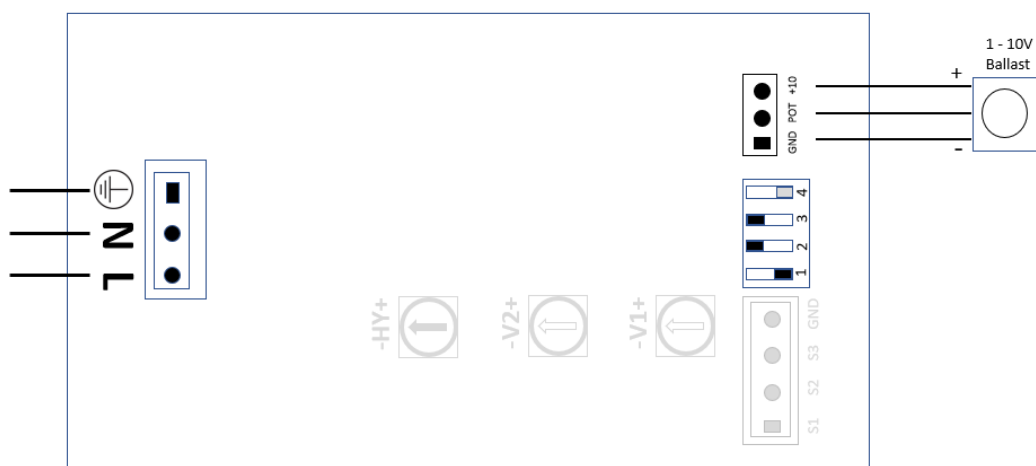


Figure 5D Variable speed operation through external domotic (BMS) systems or ballast potentiometer.

**AFTER INSTALLATION THE END USER SHOULD  
KEEP THIS GUIDE FOR FUTURE REFERENCE  
DO NOT THROW AWAY**

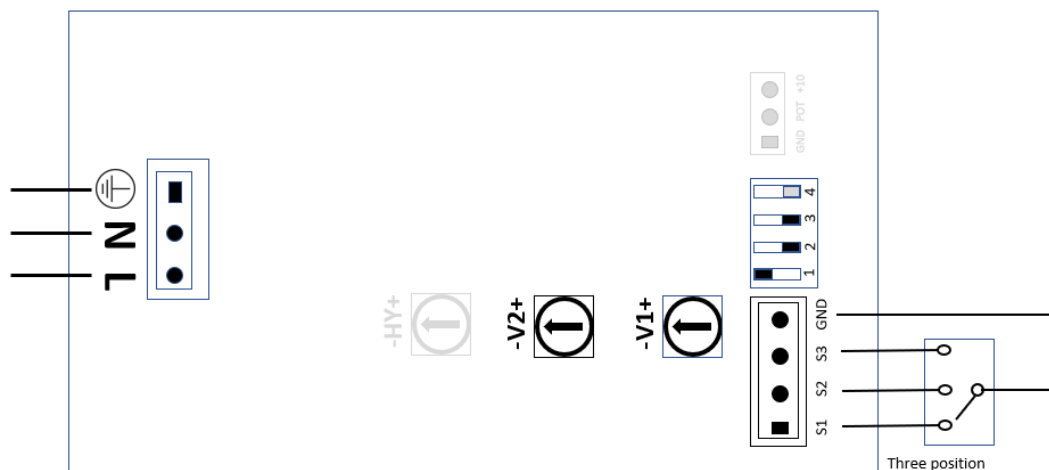
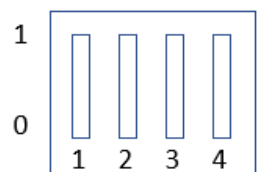


Figure 5E Three speed operation with SEL wired speed selector.

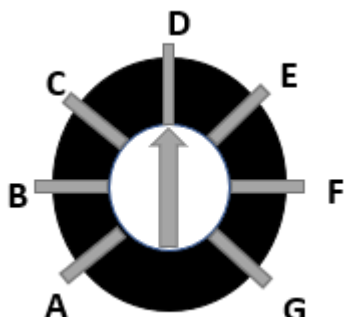
1	2	3	4	Operation
0	0	0		Single Speed
1	0	0		Two speed
0	1	0		Variable speed with CTRL wired controller
0	1	1		Variable speed through external domotic (BMS) system or ballast potentiometer
1	0	0		3 speed with SEL wired control

1	2	3	4	Operation
			0	Humidistat enabled
			1	Humidistat disabled



Dip Switch Configuration

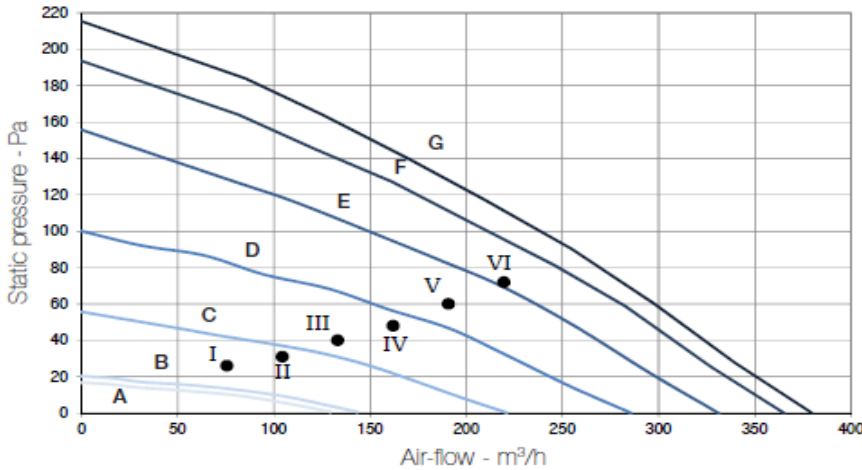
## 11. Fan Speed Settings



Position	Speed	W max	m <sup>3</sup> /h max
A (min)	20%	4	130
B	30%	6	144
C	45%	8	221
D	60%	14	286
E	75%	22	332
F	90%	30	365
G (max)	100%	36	380

SAP Appendix Q Test Results.

Test Point (k + n)	1	2	3	4	5	6
Exhaust air flow (l/s)	21	29	37	45	53	61
Exhaust air flow (m <sup>3</sup> /h)	75.6	104.4	133.2	162	190.2	219.6
Total Measured power	4	5.08	6.61	9.85	13.3	18.04
SFP (W/l/s) (Rigid Pipe)	0.19	0.18	0.18	0.22	0.25	0.30
SFP (W/l/s) (75mm OD Semi-Rigid)	0.22	0.21	0.21	0.23	0.26	0.30



## 12. Humidistat Settings

The PHS\_MEV\_H machine operates at a continuous normal air flow rate setting. The unit fan speed will increase if the unit detects a rise in humidity levels in the property. The reaction thresholds to various humidity levels can be varied by adjusting the trimmer HY.

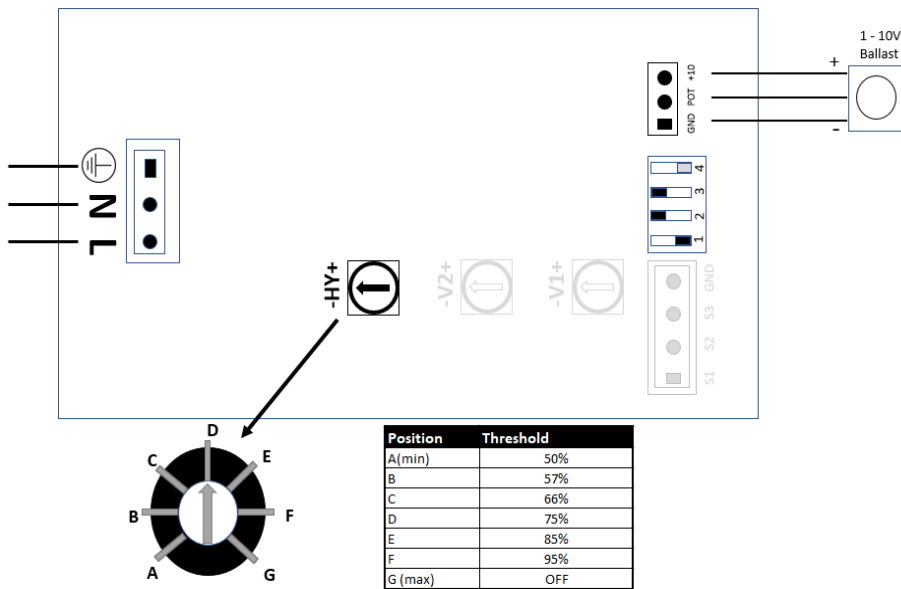


Figure 5G



CTRL



SEL



### 13. ErP Directive

a)	Marking	-	Passive House Systems
b)	Model	-	PHS MEV
c)	SEC Class	-	D
C <sub>1</sub> )	SEC Warm Climates	kWh/m <sup>2</sup> .a	-8.9
C <sub>2</sub> )	SEC Average Climates	kWh/m <sup>2</sup> .a	-20.9
C <sub>3</sub> )	SEC Cold Climates	kWh/m <sup>2</sup> .a	-41.9
	Energy Label	-	Yes
d)	Unit Typology	-	Residential - unidirectional
e)	Type of drive	-	Variable speed drive
f)	Type of heat recovery system	-	Absent
g)	Thermal efficiency of heat recovery	%	Not applicable
h)	Maximum flow rate	m <sup>3</sup> /h	230
i)	Electrical power input at max flow rate	W	36
j)	Sound power level (L <sub>wa</sub> )	dB(A)	42
k)	Reference flow rate	m <sup>3</sup> /h	161
l)	Reference pressure difference	Pa	50
m)	Specific power input	W/m <sup>3</sup> /h	0.043
n <sub>1</sub> )	Control factor	-	0.85
n <sub>2</sub> )	Control typology	-	Central demand control
o <sub>1</sub> )	Max internal leakage rate	%	N/A
o <sub>2</sub> )	Max external leakage rate	%	N/A
p <sub>1</sub> )	Internal mixing rate	%	N/A
p <sub>2</sub> )	External mixing rate	%	N/A
q)	Visual filter warning	-	N/A
r)	Instructions to install regulated grilles	-	Reference instruction booklet
s)	Internet for instruction	-	<a href="http://www.passivehousesystems.com">www.passivehousesystems.com</a>
t)	Airflow sensitivity to pressure	%	N/A
u)	Indoor/outdoor air tightness	m <sup>3</sup> /h	N/A
v <sub>1</sub> )	AEC -Annual electricity consumption (Warm Climates)	KWh	0.4
V <sub>2</sub> )	AEC -Annual electricity consumption (average Climates)	KWh	0.4
v <sub>1</sub> )	AEC -Annual electricity consumption (Cold Climates)	KWh	0.4
w <sub>1</sub> )	AHS -Annual heat saved (Warm Climates)	KWh	9.9
W <sub>2</sub> )	AHS -Annual heat saved (Average Climates)	KWh	21.9
w <sub>1</sub> )	AHS -Annual heat saved (Cold Climates)	KWh	42.9
	Sound Pressure @3m, 40%	dB(A)	14
	Ambient Temperature	°C	+40
	Degree of Protection	-	X2
	Marking	-	CE

## 14. Warranty

We appreciate you choosing this quality product. We are confident that you will be delighted with the performance of the system and the resulting improvement in air quality in your home after it has been installed. This unit is covered by a 2-year warranty. You should not dismantle or remove any parts of the product other than those instructed in this guide. Tampering with the unit will void the warranty. The valves should be checked periodically to ensure there is air flowing through the system.

### Passive House Systems Supply & Installation

If your product has been supplied and installed by Passive House System or an authorised agent it is covered with a two-year parts and labour warranty. If you detect a fault, please contact us on 021 4875297. You will be given guidance over the phone, or an arrangement may be made for a member of our team to visit (call-out charges may apply if a fault cannot be identified).

### Supply Only

If your product has been supplied by Passive House System and installed by a third party it is covered by a two-year parts only warranty. If you detect a fault and the product has been installed in accordance to the fitting/wiring instructions, relevant guidance documents and by a competent and qualified person (proof may be required), please return the product to the place of purchase for a replacement.

### Warranty Conditions & Exclusions

Please note that a receipt will be required as proof of purchase. Products bought from an unapproved source, including but not limited to auction websites, are not covered by the warranty.

- 1 The system must be correctly installed and operated according to the instructions contained in the user guide supplied.
- 2 The warranty will be rendered invalid if the system has been serviced, maintained, repaired, taken apart or tampered with by any person not authorized, which in any way contradicts the instruction guide set out by Passive House Systems
- 3 The warranty does not cover accidental damage, misuse or abuse.
- 4 The warranty is in addition to your statutory or legal rights.

Your unit serial number \_\_\_\_\_

For warranty conditions and exclusions, visit [www.passivehousesystems.ie/warranty](http://www.passivehousesystems.ie/warranty).

### Installer Details (PRINTED)

Installer Name	
Company Name	
Telephone No.	
Installation Date	

#### Passive House Systems (IRL)

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