DV110 Adroit
(Integral CO$_2$ Sensor)

Adroit Line Top Entry
Up to 389 m^3/h air volume @100Pa

KEY FEATURES

- Over 90% thermal efficiency
- Triple filter design with two Coarse > 75% and one ISO ePM1 50% filters - ISO 16890 compliant
- Automatic, 100% summer by-pass
- Integral humidity and carbon dioxide sensors
- Internet control by smartphone, tablet, or PC
- BMS connection
- Auto cut-out switch for extra safety

With its powerful air volume capacity and high thermal efficiency the DV110 Adroit is suitable for medium sized family homes. Control your indoor air environment at home or on the go via the Adroit 'Cloud' internet control by smart phone, tablet or PC.

With the triple filter design with an ISO ePM1 50% (F7) pollen filter, the DV110 Adroit provides additional protection against invisible, harmful particles and creates an ultra hygienic environment.

The automatic, 100% summer by-pass facility isolates the heat recovery function and helps to effectively maintain a temperate indoor air climate during the summer months.

The unit includes an easily removable, plastic heat exchanger and may be equipped with a range of optional accessories for higher performance.
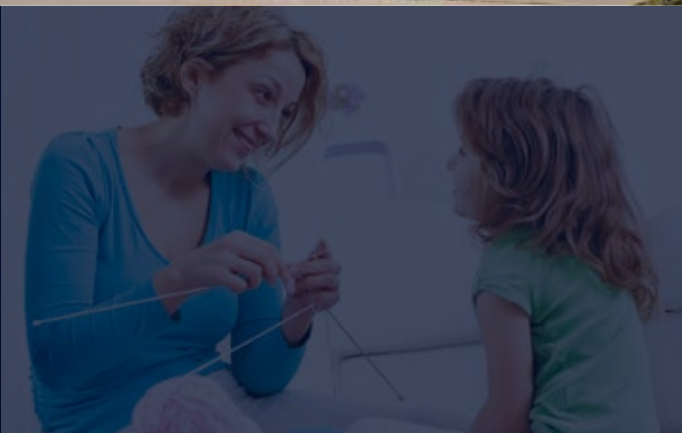
TECHNICAL DATA

Specification	DV110
Suitable for dwellings up to m²*	170
Max air flow (m³/h) / (l/s) at 100Pa.	389 / 108
Thermal efficiency (%)	Up to 90
Heat exchanger	Cross-Counter-Flow (Plastic)
Fans	EC
Summer by-pass damper	100% automatic
Integral humidity sensor (RH %)	0 - 100
Frost protection (optional heater)	Smart Frost
Controls (optional)	Digital - 4 Profiles, 100% adjustable
Connection to BMS	Modbus / KNX optional
Mounting	Wall / Ceiling
Sound pressure level @3m (dB(A))	22.5
Duct diameter (mm)	160 (4 ports)
Condensate discharge (ins)	3/4 BSP
Electrical supply	230V / 1ph / 50Hz
Electrical power input at max flow (W)	226
Filter Class*	2x ISO Coarse > 75% (G4) and 1x ISO ePM1 50% (F7)
Built-in electric post-heater (optional) (W)	900
Protection class	IP34
Casing insulation (mm)	20
Weight (kg)	58
Dimensions (L x D x H) (mm)	638 x 472 x 678
Duct entry	Top Entry
Versions available Right Hand: With optional electric post-heater: Left Hand: With optional electric post-heater:	90001267 90001267EPH 90001268 90001268EPH
EAN Right-handed unit	5019009327235 5019009327396 (EPH unit)
EAN Left-handed unit	5019009327242 5019009327402 (EPH unit)

*Complies with ISO 16890

DIMENSIONS
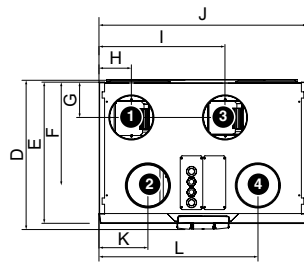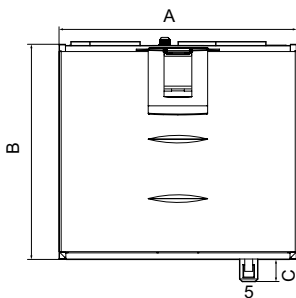
Duct outlets, model R
Inner diameter of female outlet collar ø 160 mm

1. Supply air to dwelling
2. Extract air from dwelling to unit
3. Exhaust air out
4. Outdoor air to unit
5. Condensate drain

Duct outlets, model L
Inner diameter of female outlet collar ø160 mm

1. Exhaust air out
2. Outdoor air to unit
3. Supply air to dwelling
4. Extract air from dwelling to unit
5. Condensate drain

+ excludes motors. Motor warranty one year from date of purchase

Model	A	B	C	D	E	F	G	H	I	J	K	L
DV110	638	678	42	472	455	325	111	112	390	638	160	478

PERFORMANCE
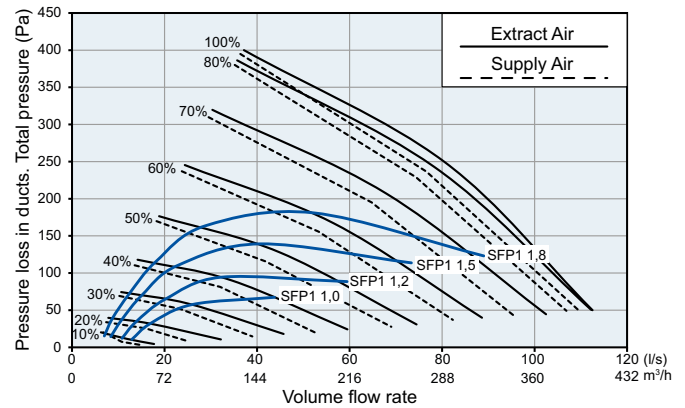
* Guidance only. Dependant upon system pressure.

ACCESSORIES

Adroit Digital Controller
Wall mounted, LCD display with four 100% independently user adjustable air flow profiles (Home, Away, Boost, Custom). A range of indoor parameters ie: air flow rates, temperature, humidity, by-pass, time clock settings, CO_2 sensor, filter alert are adjustable to suit your indoor environment. Internet connectivity via Adroit 'Cloud' for control at home or on the go.

Adroit Speed Controller
Wall mounted, four speed (independently adjustable) rotary switch air flow controller.

Visit airflow.com for Adroit controls options data sheet.

Accessory	Product Code
Adroit Digital Controller	90000610
Adroit Relative Humidity Transmitter	90000612
Adroit CO_2 Transmitter	90000613
Adroit Speed Controller	9041219
Ceiling Mounting Plate	90000716
Attic Roof Penetration Plate	90000718
Additional 900W Heater for DV110 (R)	90000616
Additional 900W Heater for DV110 (L)	90000617
Filter set (ISO Coarse > 75 % + ISO ePM, 50%, ISO Coarse > 75 %) (2xG4, 1xF7)	90000378
Boost Switch	90000542
KNX-Converter	90000723

CERTIFICATION

The DV110 Adroit meets requirements set out by the Energy Related Products (ErP) Directive 2016, achieving an A rating. You can find out more about the ErP Directive at: www.airflow.com
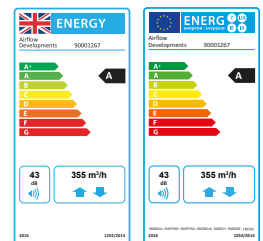
The DV110 was tested and has achieved Passive House Approval by the Passive House Institute when equipped with the optional Electric Post-heater.

DV110 Adroit
(Integral CO_2 Sensor)

Adroit Line Top Entry

Up to 389 m³/h air volume @100Pa

The DV110 Adroit is fitted with a unique triple air filter facility. It comes with two ISO Coarse > 75% (G4) air filters and an ISO ePM1 50% (F7) filter, which provides additional air filtration by preventing particles as small as pollen from entering the premises. This is of particular benefit to those that suffer from asthma or hay fever and other respiratory conditions.
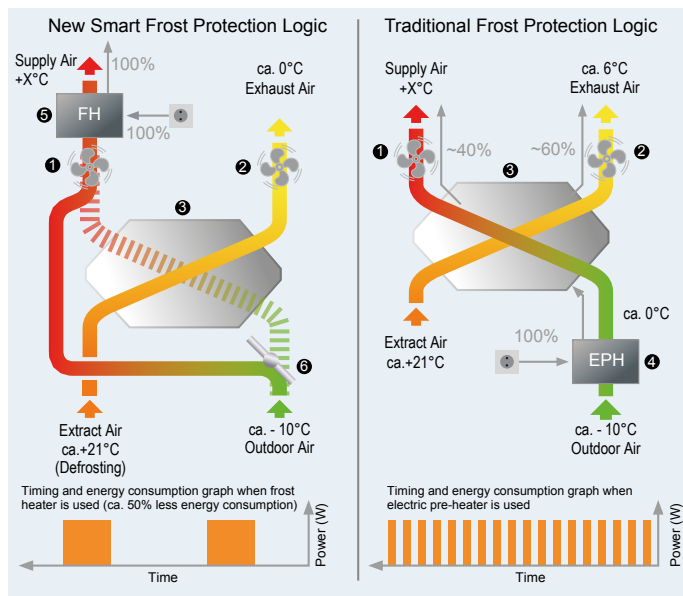
You can control your Adroit unit via internet or local network using laptop, smartphone, tablet etc. As an option there is a digital controller available that enables you to adjust the ventilation levels of your Adroit unit as well as setting the user profiles. The controller provides significant information to the user regarding the performance of their Adroit system including; adjusting the ventilation levels, filter maintenance, separate fan control, faults in the system and commissioning

the system. You can also use an optional manual controller which provides simple control by switching ventilation profiles.

Through combining your unit with additional humidity and CO_2 sensors, you are able to achieve on-demand ventilation for the property. This is possible, as due to changes to humidity and CO_2 levels that occur through changes in occupancy or usage, the ventilation will boost or reduce to match demand; without the need of manual intervention.

The DV110 can be integrated with a Building Management System (BMS) via a Modbus connection or KNX, which allows the user to monitor and control the unit's functions via a central control system.

NEW SMART FROST PROTECTION

New Smart Frost Protection Logic

Supply Air +X°C — 100% — FH — 100%

ca. 0°C Exhaust Air

Extract Air ca.+21°C (Defrosting)

ca. - 10°C Outdoor Air

Timing and energy consumption graph when frost heater is used (ca. 50% less energy consumption)

Time — Power (W)

Traditional Frost Protection Logic

Supply Air +X°C

ca. 6°C Exhaust Air

~40% — ~60%

Extract Air ca.+21°C

100%

ca. 0°C

EPH

ca. - 10°C Outdoor Air

Timing and energy consumption graph when electric pre-heater is used

Time — Power (W)

❶ Supply air fan
❷ Exhaust air fan
❸ Heat exchanger
❹ Electric pre-heater
❺ Frost heater
❻ Electric bypass damper

On the traditional frost protection method, the outdoor air is pre-heated before passing through the heat exchanger. This way the unit could still provide balanced ventilation even when the frost protection was on. However, the electric heater kicks in intermittently hence consumes more energy than needed.

The new Smart Frost Protection method works in a more energy efficient manner which constantly monitors the heat exchanger conditions and uses the frost heater only when necessary. This significantly reduces the energy consumption and provides more heat recovery throughout the winter season.

TRIPLE FILTER DESIGN

The majority of the MVHR units in the U.K incorporate ISO Coarse > 75% (G4) filters on the extract / supply air side. These filters catch only coarse particles such as insects and leaves to protect the heat exchanger.

ISO ePM1 50% (F7) fine filters on the other hand are highly efficient, catch invisible particles such as pollen, spore, bacterium and **dust entering the lungs**.

Adroit units are the only MVHR units which incorporate triple filter design combining ISO Coarse > 75% (G4) course filters with the ISO ePM1 50% (F7) fine filter. This significantly improves the indoor air quality and lowers your maintenance costs.
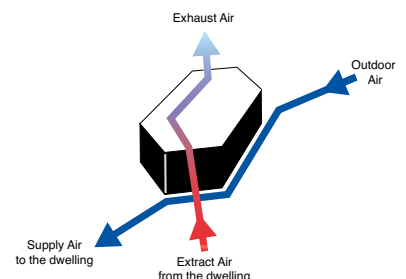

ISO Coarse > 75% (G4) filter

ISO ePM1 50% (F7) filter

100% AUTOMATIC BYPASS

The unit is equipped with an automatic, 100% bypass which totally isolates the heat exchanger so that no air passes through it. This prevents overheating the dwelling in the summer season.

Exhaust Air

Outdoor Air

Supply Air to the dwelling

Extract Air from the dwelling

SAP RESULTS

Systems with rigid ductwork only SAP 2009 results

Exhaust terminal configuration	Specific Fan Power (W/l/s)	Thermal efficiency (%)
Kitchen+1 additional wet room	1.01	91%
Kitchen+2 additional wet rooms	0.8	91%
Kitchen+3 additional wet rooms	0.79	90%
Kitchen+4 additional wet rooms	0.86	90%
Kitchen+5 additional wet rooms	0.98	89%
Kitchen+6 additional wet rooms	1.12	89%
Kitchen+7 additional wet rooms	1.28	88%

Systems with rigid ductwork only SAP 2012 results

| Exhaust terminal configuration	Specific Fan Power (W/l/s)	Thermal efficiency (%)
Kitchen+1 additional wet room	0.83	91%
Kitchen+2 additional wet rooms	0.85	90%
Kitchen+3 additional wet rooms	0.97	89%
Kitchen+4 additional wet rooms	1.16	89%
Kitchen+5 additional wet rooms	1.4	88%

CONTROLS

Ideal indoor air quality is achieved by automatically **adjusted ventilation**

Adroit DV110 is controlled via 4 ventilation profiles controls providing the following features:

- **4 ventilation profiles,** 100% adjustable
- **Internet** connection available
- **Automatic boost function** with delay timer
- **Filter maintenance reminder** via counter clock (standard)
- **Heater control** for optional post-heater
- **Connection to BMS** via LON or KNX
- **Self diagnostic** via fault signal relay
- **On-demand control** via humidity and CO_2 sensors
- **Separate fan control** for ease of commissioning
- **Weekly ventilation programming** allows users to pre-set the ventilation levels scheduled for different days
- **Indoor temperature control** based on extract air temperature or supply air temperature
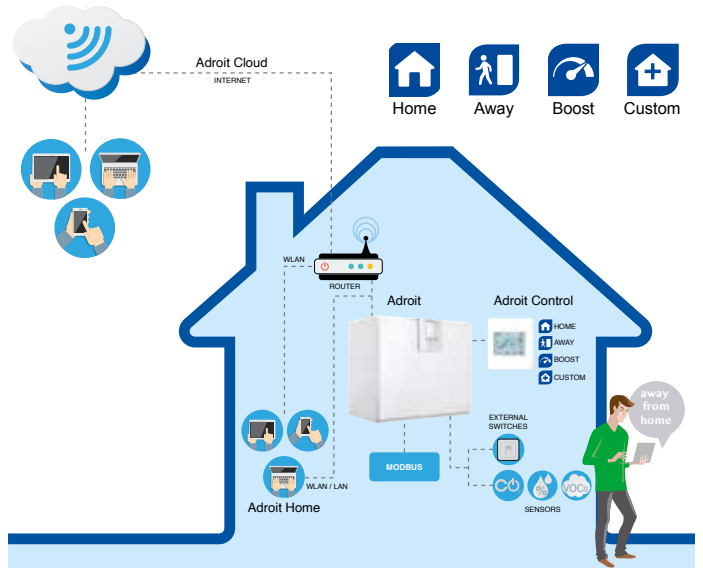
CONTROLS & ACCESSORIES
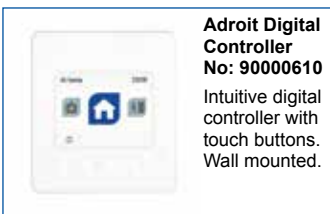
Adroit Digital Controller No: 90000610
Intuitive digital controller with touch buttons. Wall mounted.
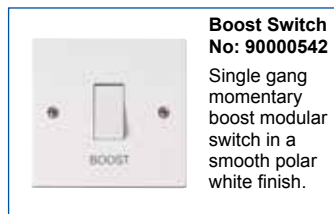
Boost Switch No: 90000542
Single gang momentary boost modular switch in a smooth polar white finish.

Adroit Speed Controller No: 9041219
Four speed manual controller. Wall mounted.

DV110 Adroit Filter Set No: 90000378
Replace filters 2x a year. (2 x G4/ISO Coarse 75%, 1 x F7/ISO ePM1 50%)

Others products available from **airflow.com**

Call: 01494 525252

Visit: airflow.com