DV50 Adroit
(Integral CO$_2$ Sensor)

Adroit Line Side Entry
Up to 205 m^3/h air volume @100Pa

KEY FEATURES

- Up to 90% thermal efficiency
- Triple filter design with two Coarse > 75% and one ISO ePM1 50% filters - ISO16890 compliant
- Automatic, 100% summer by-pass
- Integral humidity and carbon dioxide sensors
- Internet control by smartphone, tablet, or PC
- BMS connection
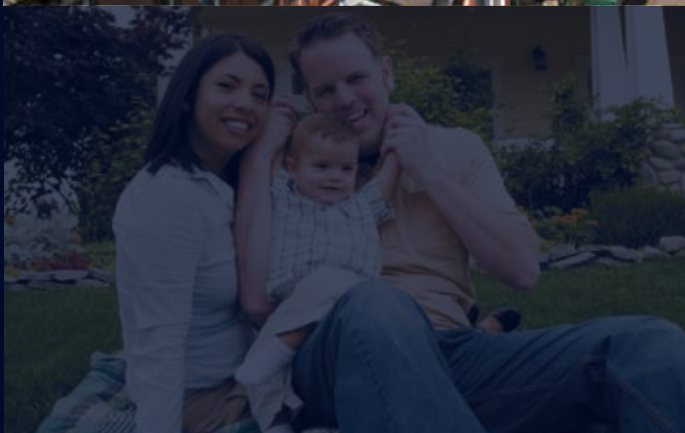- Auto cut-out switch for extra safety

With its powerful air volume capacity and high thermal efficiency the DV50 Adroit is suitable for smaller family homes and flats. 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 DV50 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.
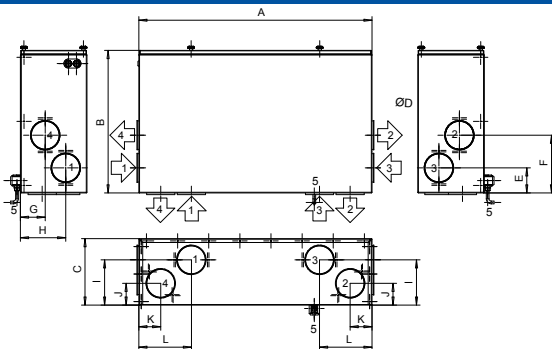
TECHNICAL DATA

Specification	DV50
Suitable for dwellings up to m²*	80
Max air flow (m³/h) / (l/s) at 100Pa.	205 / 57
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 Manual - 4 Speed controller, adjustable
Connection to BMS	Modbus / KNX optional
Mounting	Ceiling
Sound pressure level @3m (dB(A))	26.5
Duct diameter (mm)	100 (4 ports)
Condensate discharge (ins)	3/4 BSP
Electrical supply	230V / 1ph / 50Hz
Electrical power input at max flow (W)	96
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)	47
Dimensions (L x D x H) (mm)	900 x 547 x 236
Duct entry	Side Entry
Versions available Right Hand: With optional electric post-heater: Left Hand: With optional electric post-heater:	90001273 90001273EPH 90001274 90001274EPH
EAN Right-handed unit	5019009327297 5019009327334 (EPH unit)
EAN Left-handed unit	5019009327303 5019009327341 (EPH unit)

*Complies with ISO 16890

DIMENSIONS

Duct outlets, Model R

Inner diameter of the female collar: 100 mm
1. Outdoor air to the unit
2. Supply air to rooms
3. Extract air to the unit
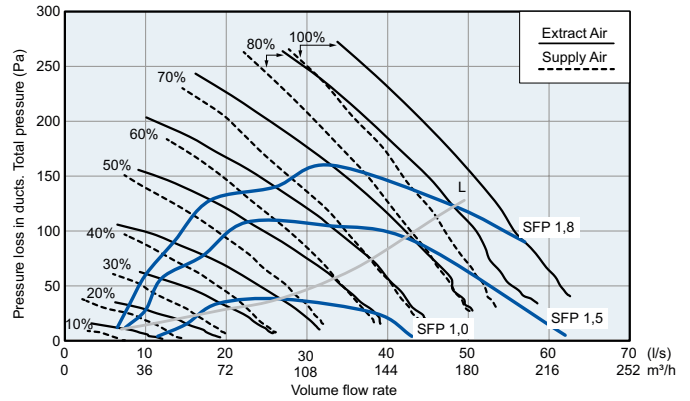4. Exhaust air outside
5. Condensate drain

Duct outlets, Model L

Inner diameter of the female collar: 100 mm
1. Extract air to the unit
2. Exhaust air outside
3. Outdoor air to the unit
4. Supply air to rooms
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	M
DV50	900	547	236	100	87	197	86	161	161	86	96	206	498

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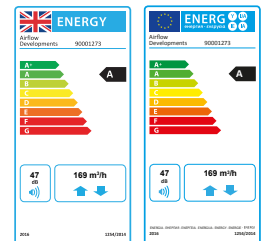
Adroit Speed Controller
Wall mounted, four speed (independently adjustable) rotary switch air flow controller.

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 (manual)	9041219
Additional 900W heater for DV50 (R)	90000626
Additional 900W heater for DV50 (L)	90000627
Filter set (ISO Coarse > 75 % + ISO ePM, 50%, ISO Coarse > 75 %) (2xG4, 1xF7)	90000620
Boost Switch	90000542
KNX-Converter	90000723

CERTIFICATION

The DV50 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 DV50 was tested and has achieved Passive House Approval by the Passive House Institute when equipped with the optional Electric Post-heater.

DV50 Adroit
(Integral CO$_2$ Sensor)

Adroit Line Side Entry

Up to 205 m^3/h air volume @100Pa

The DV50 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
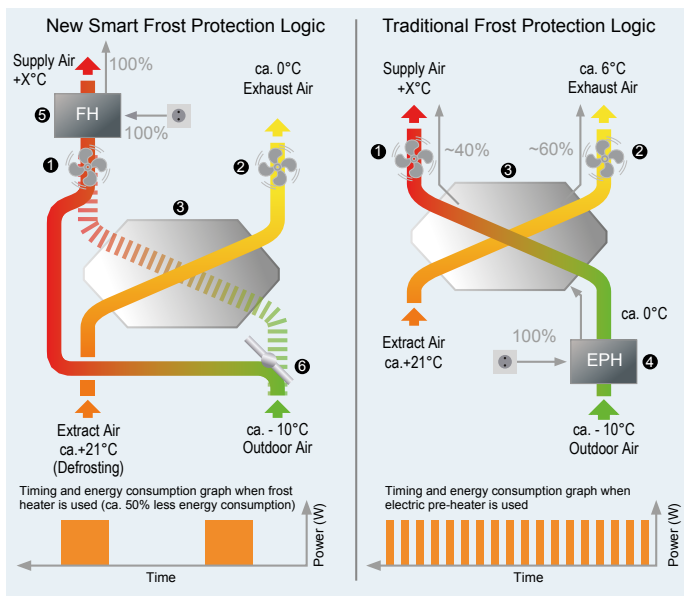
the system. You can also use an optional manual controller which provides simple control by switching ventilation profiles.

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 DV50 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%
❺ FH   100%
ca. 0°C Exhaust Air
❶   ❷
❸
Extract Air ca.+21°C (Defrosting)
❻
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
❶ ~40%   ~60% ❷
❸
Extract Air ca.+21°C
100%
EPH ❹
ca. 0°C
ca. - 10°C Outdoor Air

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

Time   Power (W)

❶ Supply air fan   ❹ Electric pre-heater
❷ Exhaust air fan   ❺ Frost heater
❸ Heat exchanger   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.
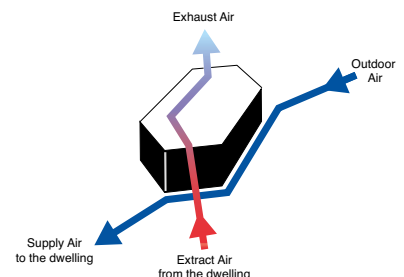
TRIPLE FILTER DESIGN

Landlords can protect their investment by insuring planned maintenance from outside the dwelling to preserve building fabric, ensure occupier wellbeing and save energy **without the need to access the dwelling or disturb the tenant.**

This significantly shortens maintenance time and saves on service cost.

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	0.91	79%
Kitchen+2 additional wet rooms	0.95	80%
Kitchen+3 additional wet rooms	1.11	81%
Kitchen+4 additional wet rooms	1.29	81%
Kitchen+5 additional wet rooms	1.54	82%

Systems with rigid ductwork only SAP 2012 results

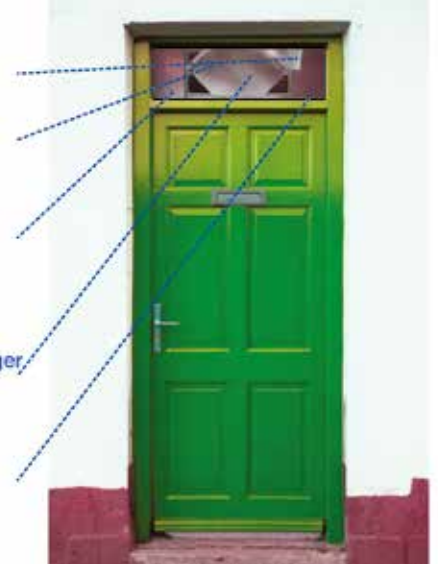| Exhaust terminal configuration	Specific Fan Power (W/l/s)	Thermal efficiency (%)
Kitchen+1 additional wet room	0.99	80%
Kitchen+2 additional wet rooms	1.21	80%
Kitchen+3 additional wet rooms	1.51	82%
Kitchen+4 additional wet rooms	1.86	82%

Easy access to replace filters

Heat Recovery

Removable, secure front cover panel for maintenance

Removable Heat Exchanger for quick cleaning

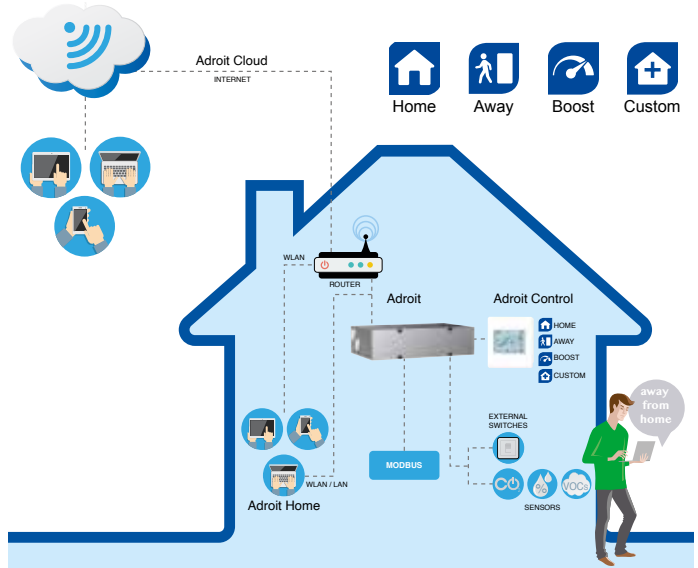Durable steel double skin casing with 20mm insulation

CONTROLS

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

Adroit DV50 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.

DV50 Adroit Filter Set
No: 90000620
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