



Installation Guide

Danfoss Air Units and Air Flex Duct Systems



Danfoss A/S is not liable or bound by warranty if these instructions are not adhered to during installation or service.

The English language is used for the original instructions.
Other languages are a translation of the original instructions.
(Directive 2006/42/EC)

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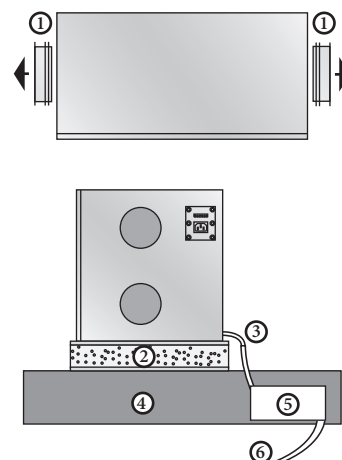
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1	Before You Start	

Please check the Danfoss Air Unit packing list to ensure that the shipment is complete.
 If you have ordered a complete Danfoss Air Solution, a packing list for the Air Flex duct system is included.
 Inspect to ensure that no parts or components have been damaged.

2 Installation of Air Units

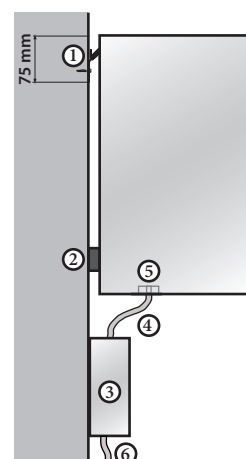
Attic Units a² and a³

1. Pull out the spigots ①.
2. Turn the spigots around and mount them using the included tapping screws (for power drill, use lowest torque setting).
3. Make a platform ② for the unit of 16 mm plywood or MDF sheet around 50 mm wall batts.
4. Allow for 60 cm free space in front of unit, to assure service access.
5. Make sure that the unit is mounted absolutely horizontal.
6. A siphon ⑤ must always be installed with the unit (to be ordered separately).
7. Mount the siphon on the joist ④ below the unit or in the room below the attic.
8. Connect the siphon to a drain ⑥.
9. The condensate line ③ must be insulated where risk of freezing occurs.
10. Connect the hose to the unit outlet condensate spigot. Lead the connected pipe to the outlet, allowing for a gradient of min. 1 cm/metre.
11. Remove the front panel and foam front, fill the condensate tray, check the outlet and reassemble the front.



Wall Units w¹ and w²

1. Place the mounting bracket ① on the wall in desired position (75 mm from bracket bottom to unit top), mark up and drill holes. Use screws suitable for the wall surface (not included).
2. Make sure that the bracket is mounted absolutely horizontal.
3. Hang the unit onto the bracket.
4. Attach the self-adhesive rubber separators ② to the lower rear back plate.
5. Allow for 60 cm free space in front of unit, to assure service access.
6. A siphon ⑤ must always be installed with the unit (to be ordered separately).
7. Mount the siphon on the wall below the unit.
8. Connect the siphon to the drain ⑤ at the unit bottom.
9. The condensate line ④ must be insulated where risk of freezing occurs.
10. Connect the hose to the unit outlet condensate spigot. Lead the connected pipe to the outlet, allowing for a gradient of min. 1 cm/metre.
11. Remove the front panel and foam front, fill the condensate tray, check the outlet and reassemble the front.



Wall Unit w¹

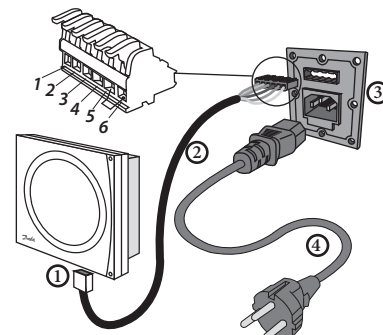
In order to comply with safety standards and avoid the risk of malfunction, the supplied protection shield must be mounted on top of the w¹-unit covering the connector plate.



3 Installation of CCM Module and Air Dial

3.1 Electrical connections

1. Connect power cable ④ to Air unit ③.
2. Plug in communication cable ② between CCM module ① and Air unit.
3. Check the signal. If it is too weak, the CCM module should be placed elsewhere, e.g. on the same floor as the Air Dial (see Air Dial Link Test).
4. If possible, place CCM module close to an ethernet connection for future connection to PC.
5. If accessories (electrical preheating, electrical afterheating, water heating surface or geothermal surface) are present, the pin on terminals 5 and 6 must be removed (also see the instructions included with the accessories).



Communication cable connections:

1. White/Orange, 2. Orange, 3. Black, 4. White/Blue, 5. Blue, 6. Black

Note! The communication cable can be extended up to 200 m. Use shielded cable, 22 or 24 AWG with 2 x twisted pair.

3.2 Wireless connection

When powering up the CCM module a green LED will flash slowly, indicating the CCM module has yet to be connected to the Air Dial.

To connect the Air Dial, insert the batteries. The Air Dial will start up in installation mode to guide the installer through the set-up:

1. Set language.
2. Create network (press button on CCM module and then press 'Air Dial').
3. Set basic step (setting up the main air volume).
4. Finish.

Connection established: green LED on CCM module lights continuously.

Connection failed: red LED on CCM module flashes slowly 5 times, see **Troubleshooting**.



3.3 Air Dial

The Air Dial has an integrated temperature sensor. To ensure best possible performance, place the Air Dial according to following guidelines:

- Place Air Dial 80-150 cm above floor.
- Place Air Dial free of curtains etc.
- Place Air Dial where the temperature is representative.
- Do not place in bathrooms.
- Do not place in direct sunlight.
- Do not place onto outer wall.
- Do not place directly above heat source.



Air Dial Link Test

Before mounting the Air Dial permanently, a link test should be carried out to ensure that transmission conditions are sufficient for the required location:

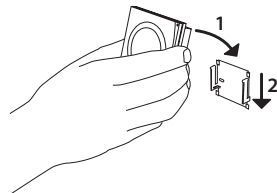
1. Hold down the Air Dial button for 5 seconds. The Service menu appears in the display (disappears automatically after one hour).
2. Select the Link Test function.
3. The function tells you if transmission conditions are sufficient or not.
4. If the link test fails, see **Troubleshooting**.

3.4 Mounting and removing CCM module and Air Dial

CCM module

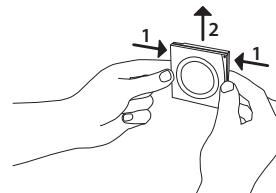
Mounting:

1. Hook the CCM on the wall bracket.
2. Press downwards to click the CCM into place.



Removing:

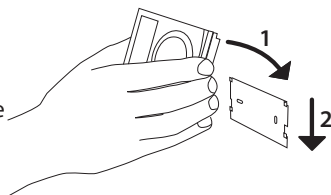
1. Press in the two latches on the side.
2. Pull the CCM upwards.



Air Dial

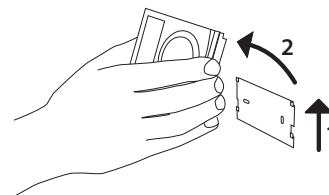
Mounting:

1. Hook the Air Dial on the wall bracket.
2. Press downwards to click the Air Dial into place.



Removing:

1. Lift the Air Dial.
2. Pull the Air Dial away.



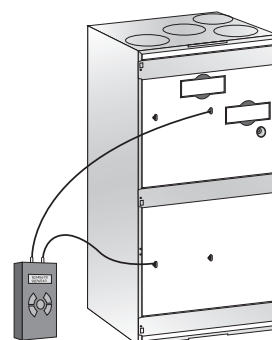
4 Balancing of the main air volume

To achieve the best possible performance, it is vital to balance the main air volumes (balancing will also help protecting the house against fungus and dry rot). The system should not be balanced/commissioned at outdoor temperatures below -3°C, as the system will go into frost protection mode (indicated by a flashing icon on the display). If necessary to perform balancing at outdoor air temperatures below -3°C, remove power for 20 seconds to de-activate frost protection for 90 minutes.

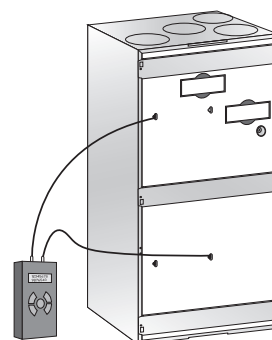
1. Remove the front panel from unit by pulling the handles.
2. First close the valves, then open them completely (if the system is equipped with other duct types than Danfoss Air Flex, set supply and exhaust valves according to the instructions of the project manager).
3. If dampers are included in the system, open these completely.
4. Mount measuring tubes between the unit's measuring points on the exhaust side and differential pressure gauge.
5. Find the required flow on the system diagram (sticker on front cover) with the corresponding differential pressure value. If the pressure is too low, adjust the fan step upwards until you reach the required pressure.
6. Move the measuring tubes to the measuring points on the supply side and use the same procedure to set the supply air.
7. After the main air volumes have been adjusted, the set-up of individual valves needs to be carried out. In most cases, this will entail minor changes to the chosen basic steps, but this can be done in the room by adjusting the valves, or by using the Air Dial to fine tune basic steps.

Adjusting an operational system

1. Press Air Dial for 5 seconds to get access to the Service menu.
2. Press "set basic step" to activate the special commissioning mode (where all outside influences are blocked - the installer controls the exhaust and supply air fans completely with 1-100% fan speed). The Service menu remains visible for one hour and then disappears.



Measuring the exhaust



Measuring the supply

5 Service Menu

Press the Air Dial button for 5 seconds to activate the Service Menu.

System Reset

1. If the system has already been balanced, make a note of the basic fan steps for later use. The values is found in the service menu: **Service > Info > basic steps**.
2. Remove and re-insert the Air Dial batteries while pressing the button until a beep is heard. The Air Dial is now in start-up mode.
3. Remove the supply or communication cable.
4. While re-connecting the cable, press the CCM module button until only the green LED is flashing.
5. The system is now reset to factory settings.

Service

Back

Info

Set filter timer

Set language

Set basic step

Link test

Accessories

6 Dimensioning the Air Flex Duct System

When dimensioning Danfoss Air Flex, a few important guidelines must be followed:

- The combined pressure loss for fresh air intake + supply should not exceed 100Pa.
- The combined pressure loss for extract + outlet should not exceed 100 Pa.
- The min. pipe length is 5 m.
- To obtain a flow per pipe $\leq 25 \text{ m}^3/\text{h}$, the max. pipe length is 16 m. If the flow per pipe is $25\text{-}30 \text{ m}^3/\text{h}$, the max. pipe length should not exceed 13 m.
- The difference between shortest and longest pipe connected to the same manifold should not exceed 10 m.

Note! Pressure loss values for the components can be found in the Danfoss Air Flex product catalogue.

7 Installing Air Flex Manifold

7.1 Positioning the manifold

If possible, the manifold should be positioned close to the Danfoss Air ventilation unit. Alternatively, determine the manifold position based on an assembly drawing (if available). An assembly drawing should only be considered to be a guide. If the manifold in the drawing is positioned inappropriate in relation to the construction or to other technical installations, the manifold should be moved.

The manifold can be mounted on a wall or in the ceiling or cast in concrete slabs, depending on what is most appropriate for routing.



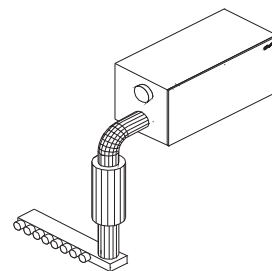
Manifold in floor insulating material before casting



Manifold beneath ceiling inside climate shield

7.2 Mounting the manifold

A silencer must be placed between ventilation unit and manifold - for supply as well as for extract (only supply is illustrated).
The silencer should have the same diameter as the connecting pipe on the ventilation unit , and have a length of 900 mm.



Fasten the manifold using the two brackets mounted beneath the base. Turn the brackets and fasten them to the substrate. If it is not possible to use the mounting brackets, the manifold can be fastened with metal strapping.
To prevent possible nuisance, place a soft material (e.g. 2-3 mm of floor underlay) between the metal strapping and manifold.



Close all unused spigots on the manifold with a plastic plug, type DEC-77 (item no. 089F0615).



7.3 Mounting the inspection hatch

Cut a hole with max. Ø150 mm in the manifold where the inspection hatch is wanted.



Place the inspection hatch, type DCH-150x150 (item no. 089F0643) over the hole and fasten the hatch with 4 self-tapping screws.



8 Installing Air Flex Supply Box

8.1 Placing the supply air box

The supply air box and grill should ideally be placed against a wall:

- beneath a window
- beneath a radiator
- beside a fireplace/stove

If possible, avoid placing the grill underneath furniture or in the occupied zone.
If an assembly drawing is enclosed, use it for guidance in positioning the box and grill.



For wall mounting use a DPGW box, which is smaller and therefore fits in most inner walls. All physical dimensions of the DPGW box are listed in the Danfoss Air product catalogue.
To fasten the grill and mount the damper, use exactly the same method as for floor mounting.



8.2 Mounting the supply air box in the floor

Place the supply air box in insulation material so that the distance to the top edge of the finished floor can be adjusted with the telescopic collar (collar can be extended by 100 mm).



Fasten the box with the two brackets mounted beneath the base. Turn the brackets and fasten them to the substrate.



Mount an o-ring in the second groove on the Flex pipe.



Mount the Flex pipe on the box.



When the pipe is in place, fasten it by folding at least two of the four cut-outs in with a screwdriver or the like.



Close unused spigots on the box and manifold with a plastic plug, type DEC-77 (item no. 089F0615).

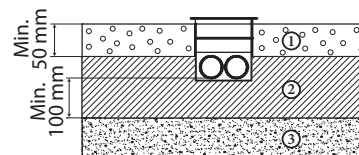
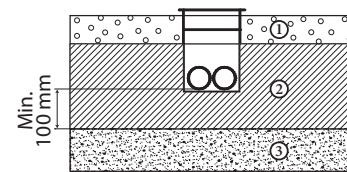


8.3 Casting

The Flex pipe can be positioned across the insulating layer. However, to minimize heat loss it is recommended to have minimum 100 mm insulation under the Flex pipe. Furthermore, we recommend a minimum concrete thickness of 50 mm above the Flex pipe, but since this depends on the concrete type and the general floor building, this should be clarified with the responsible for this contract.

Example:

- ① Concrete
- ② Insulation material (EPS)
- ③ Sand



Lead the Flex pipe from underneath the insulation material.
The recommended distance between the stand and insulation layer is 300 mm.



Place a piece of EPS over the Flex pipe ends before casting. Fasten to ensure that the position is maintained during casting.
In this example, two pieces of soft steel are used for the fastening.



After casting, remove the fastened insulation material and mount the floor box.



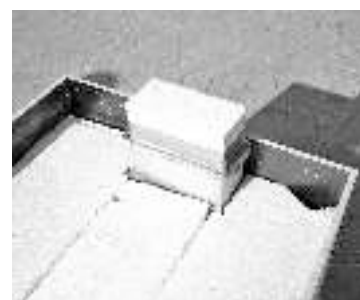
To fasten the floor box, use the two pre-mounted brackets.



Before post-casting around the box, raise the telescoping collar to a level **just above** the finished floor height.
Tape the passage between the telescoping collar and the box itself.
Tape a piece of insulation material in the box's opening.



Finally, fill the area around the box with insulation material and cast in place.
When the concrete is dry, the telescoping collar can be loosened with a light blow and lowered down into the finished floor.



In some cases, it may be easier to fill all or part of the hole with light expanded clay aggregate mixed with concrete.
This will help prevent the relatively small pieces of insulation material from floating on the concrete during casting.



When the finished floor is laid, pull out the box's adjustable insert and click the grill in place with four leaf springs.
Place the grill in the insert and press it in place evenly on both sides.



If a damper is selected for the grill, mount it beneath the grill by using the pre-mounted clips.



The finished result.



9 Installing Wall and Ceiling Valves

9.1 Positioning wall and ceiling valves

The box and valves should be positioned in accordance with the room's function and design.

The supply valve should preferably be positioned near a window, above a radiator or near a fireplace. Avoid positions directly over areas where people may be located for longer periods of time, i.e. above beds, sofas, dining tables, etc.

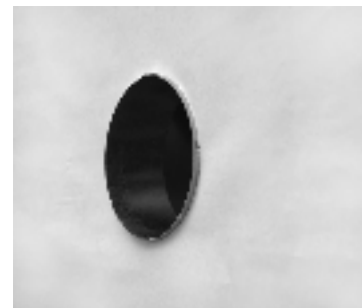
The extract valve should be mounted in 'wet' rooms, e.g. the kitchen, bathroom and utility room. If possible, the valve should be positioned where moisture develops, i.e. near showers, sinks, etc.

If an assembly drawing is enclosed, it should be used as a guide for positioning the box and valve.

Note! Please be aware that there is a difference between supply and extract valves.

9.2 Mounting wall and ceiling valves

Mount the box so that the valve spigots are even with the finished wall/ceiling.



Push the valve in place in the box .



If necessary, correct the valve placement.



10 Installing Air Flex Pipes

10.1 Mounting Air Flex pipes in the floor

Cut a route for the pipes in the insulation material. The width of the route should be adjusted to ensure a secure installation of the pipe.

If it is not possible to fit the pipes into furrows in the insulation material, they can be fastened to the Rionet.

Maximum distance between the fastening points/strips is 50-70 cm.



To achieve the best possible seal of the system, mount an o-ring at each end of all pipes. Place the o-ring in the second groove from the end before mounting the pipe in a manifold, box or coupler.



The pipes can then be mounted in the manifold.



When the pipe is in place, fasten it by folding at least two of the four cut-outs in with a screw-driver or similar.



To keep concrete, building dust and other material from soiling the pipes during mounting, close all unused spigots.

If the system is not used immediately after installation, the pipes must be sealed to prevent the accumulation of moisture. The pipes can be sealed with a plastic plug, type DEC (089F0613), or by closing the valves/grills.

To the extent possible, avoid making 'sharp' bends on the pipe, as this will increase the system pressure loss.

When all pipes are mounted, thoroughly clean the manifold via the connecting pipe.



10.2 Mounting Air Flex pipes in walls and ceilings

Wall mounting is recommended exclusively for internal partitions to prevent thermal bridges and penetrations of the climate shield.

For ceiling mounting, it is also recommended to mount the pipes inside a climate shield. If this is not possible, the climate shield/damp-proof membrane must be thoroughly sealed with weather-resistant tape or specially developed membranes.

For systems with geothermal surfaces, the supply pipe must be insulated with at least 30 mm of insulation material to prevent external condensation.



If the enclosed mounting brackets cannot be used, metal strapping can be used to fasten the boxes.

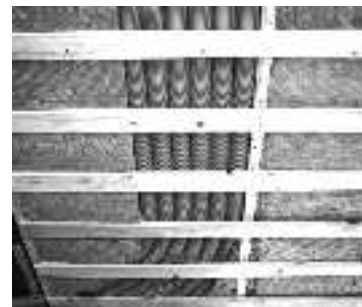
It is important that the pipes are fully extended before fitting to minimise pressure loss in the system.



This is an example of six correctly laid Flex pipes beneath the ceiling on the inside of the climate shield.

When fitting the ceiling, make sure that the screws are not damaging the pipes.

When all pipes are mounted, thoroughly clean the manifold via the connecting pipe



10.3 Coupling of two Air Flex pipes

If it is necessary to extend a pipe or connect two pipe ends, this can be done with a pipe coupling, type DPC (089F0607).



If a sharp 90° bend is needed, use a 90° elbow, type DFE (089F0654).



Place an o-ring in the second groove of both pipes that are to be connected.



Finished couplings.



11 Insulation and Sound Damping

The entire Danfoss Air Flex duct system must be thoroughly insulated to minimise heat loss and prevent condensation. Pipes are recommended to be covered with 100 mm of insulation. Sound-damping the system is important for general comfort and wellbeing. A silencer with a length of 900 mm should be mounted between the unit and the manifold to reduce noise from spreading through the system. In some cases, it might also be advisable to mount silencers at the outlet and air inlet ends.

12 Installing Roof Terminals and Wall Grills

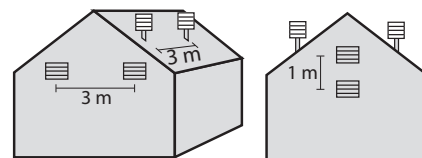
Roof terminals and wall grills are visible on the outside of the house. They should therefore always be adapted to the architectural style of the house. It is recommended to place the terminals at least

- 3 m horizontally apart, or
- 1 m vertically apart

always with the outlet terminal at the top.

Terminals and grills should be placed on a north- or an east-facing surface for optimal comfort.

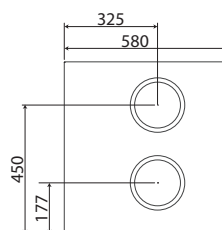
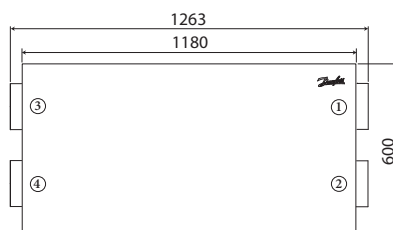
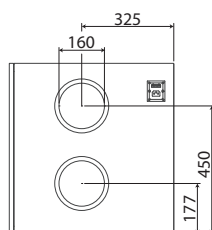
The outlet should be placed above the top window and at least 1 m from all windows.



13 Technical Data

13.1 a² Unit

Dimensions



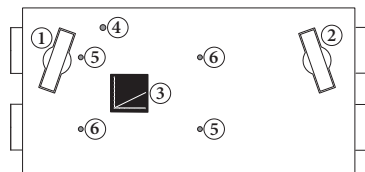
- ① Outdoor air
- ② Exhaust air
- ③ Extract air
- ④ Supply air

Weight of unit: 52 kg

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Danfoss Air Units and Air Flex Duct Systems

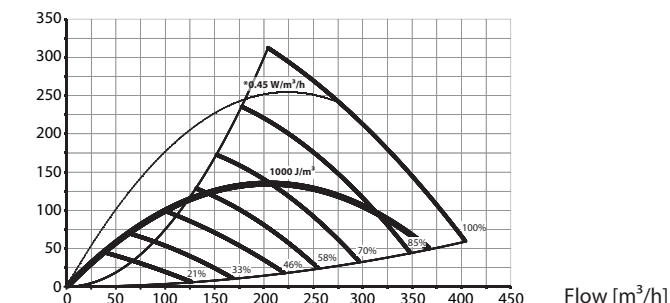
Front view (without front panel)



- ① Filter, extract air
- ② Filter, supply air
- ③ Flow chart (for balancing)
- ④ Filter reset button
- ⑤ Differential pressure for extract air
- ⑥ Differential pressure for supply air

Capacity

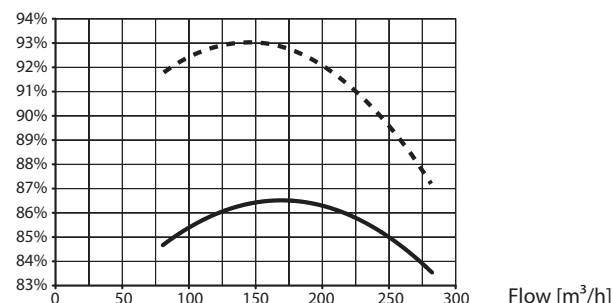
Pressure [Pa]



* 0.45 W/m³/h = "Passiv Haus" requirements.

Temperature ratio

η [%]



	Extract air	Fresh air	
-----	t = 21°C RH = 36%	t = -3°C RH = 80%	with condensation and 5% imbalance
—————	t = 25°C RH < 27%	t = 5°C	as acc. to EN308

Typical operation

Flow	Pext.	SFP	P ₁ tot.
160 m³/h	50 Pa	615 J/m³	27 W
220 m³/h	70 Pa	728 J/m³	44 W
220 m³/h	100 Pa	854 J/m³	52 W
260 m³/h	70 Pa	783 J/m³	57 W
260 m³/h	100 Pa	894 J/m³	65 W
300 m³/h	90 Pa	936 J/m³	78 W

Sound data

Flow m³/h	Pressure Pa	Measured at:	Frequency band, sound power Lw(A) [dB(A)]								Sound pressure Lp(A) (standard* room) [dB(A)]
			63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
162	70	Supply air duct	23	34	40	36	29	25	17	18	40
		Extract air duct	23	33	39	37	29	24	18	18	
		Cabinet									
162	100	Supply air duct	25	35	43	38	31	28	18	18	41
		Extract air duct	25	36	42	39	30	25	17	18	
		Cabinet									
216	70	Supply air duct	26	36	44	39	33	30	19	18	45
		Extract air duct	28	36	43	41	34	29	18	18	
		Cabinet									
216	100	Supply air duct	26	37	44	40	34	31	19	18	46
		Extract air duct	27	37	45	42	35	30	19	18	
		Cabinet									
250	100	Supply air duct	28	39	46	42	37	33	21	18	49
		Extract air duct	30	39	48	45	38	33	20	18	
		Cabinet									

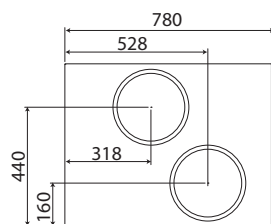
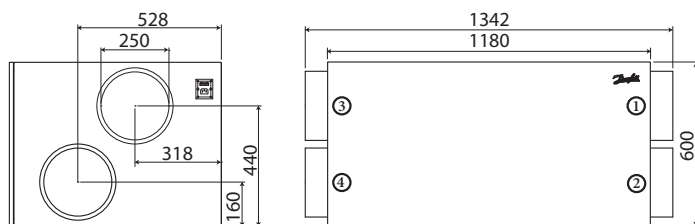
* Values for sound pressure calculated for a standard room with A = 10 m², H = 2.4m and mean absorption 0.2.

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Danfoss Air Units and Air Flex Duct Systems

13.2 a³ Unit

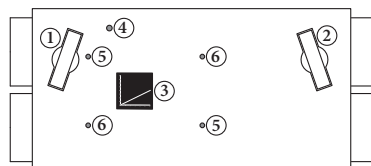
Dimensions



- ① Outdoor air
- ② Exhaust air
- ③ Extract air
- ④ Supply air

Weight of unit: 67 kg

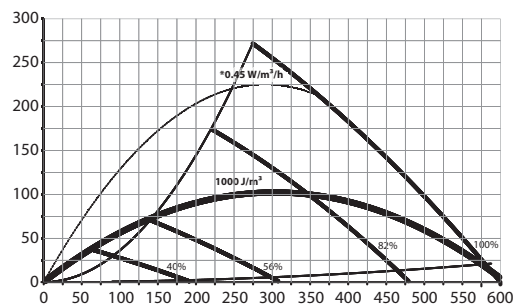
Front view (without front panel)



- ① Filter, extract air
- ② Filter, supply air
- ③ Flow chart (for balancing)
- ④ Filter reset button
- ⑤ Differential pressure for extract air
- ⑥ Differential pressure for supply air

Capacity

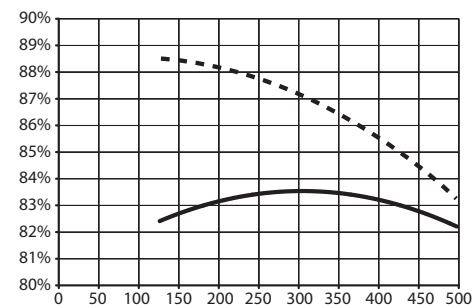
Pressure [Pa]



* 0.45 W/m³/h = "Passiv Haus" requirements.

Temperature ratio

η [%]



	Extract air	Fresh air	
-----	t = 21°C RH = 36%	t = -3°C RH = 80%	with condensation and 5% imbalance
————	t = 25°C RH < 27%	t = 5°C	as acc. to EN308

Typical operation

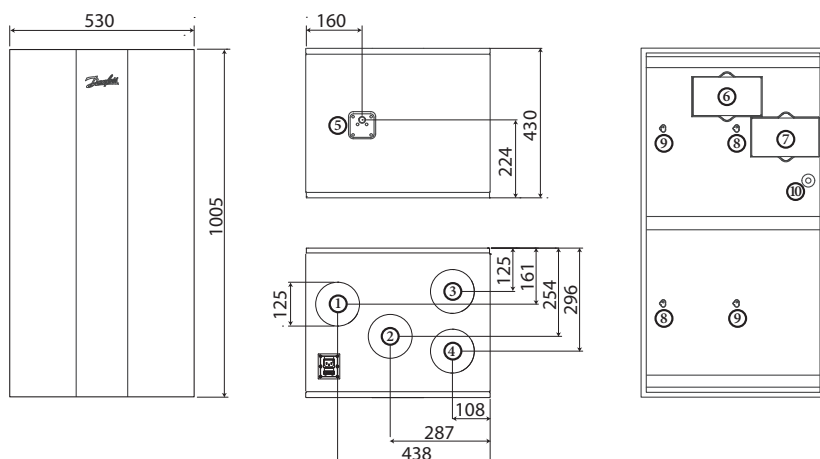
Flow	Pext.	SFP	P ₁ tot.
200 m³/h	70 Pa	787 J/m³	44 W
350 m³/h	70 Pa	835 J/m³	81 W
450 m³/h	70 Pa	973 J/m³	122 W
350 m³/h	100 Pa	1000 J/m³	97 W

Sound data

Flow m³/h	Pressure Pa	Measured at:	Frequency band, sound power Lw(A) [dB(A)]								Sound pressure Lp(A) (standard* room) [dB(A)]
			63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
350	70	Supply air duct	35	45	56	49	47	44	31	16	57
		Extract air duct	35	44	54	48	48	44	31	19	
		Cabinet	33	42	54	46	45	43	30	20	
450	100	Supply air duct	39	48	62	55	52	50	37	22	61
		Extract air duct	39	47	61	55	53	48	37	20	
		Cabinet	38	46	60	52	50	47	36	22	

* Values for sound pressure calculated for a standard room with A = 10 m², H = 2.4m and mean absorption 0.2.

13.3 w¹ Unit

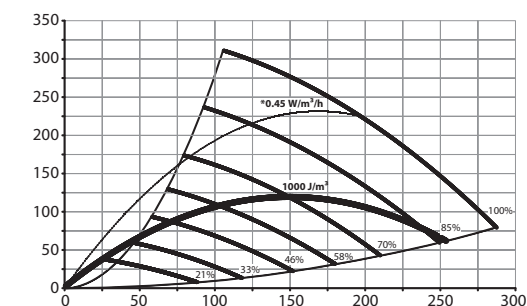


- ① Supply air
- ② Extract air
- ③ Exhaust air
- ④ Outdoor air
- ⑤ Condensate drain
- ⑥ Filter, extract air
- ⑦ Filter, supply air
- ⑧ Differential pressure for extract air
- ⑨ Differential pressure for supply air
- ⑩ Filter reset button

Weight of unit: 31 kg

Capacity

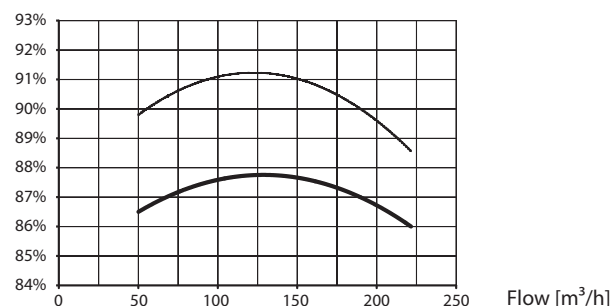
Pressure [Pa]



* 0.45 W/m³/h = "Passiv Haus" requirements.

Temperature ratio

η [%]



	Extract air	Fresh air	
-----	t = 25°C RH = 52%	t = 5°C RH = 80%	with condensation and 5% imbalance
—————	t = 25°C RH < 27%	t = 5°C	as acc. to EN308

Typical operation

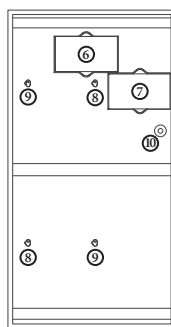
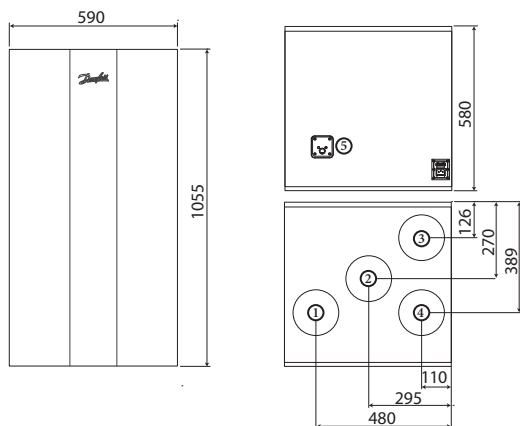
Flow	Pext.	SFP	P ₁ tot.
100 m³/h	35 Pa	588 J/m³	16 W
100 m³/h	55 Pa	682 J/m³	19 W
140 m³/h	60 Pa	710 J/m³	28 W
140 m³/h	70 Pa	759 J/m³	30 W
180 m³/h	70 Pa	798 J/m³	40 W
180 m³/h	100 Pa	945 J/m³	47 W

Sound data

Flow m³/h	Pressure Pa	Measured at:	Frequency band, sound power Lw(A) [dB(A)]								Sound pressure Lp(A) (standard* room) [dB(A)]
			63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
126	70	Supply air duct	20	30	41	42	38	30	19	18	47
		Extract air duct	18	30	41	41	30	26	18	18	
		Cabinet									
126	100	Supply air duct	22	32	46	45	39	32	21	18	50
		Extract air duct	22	33	43	42	32	27	19	18	
		Cabinet									
162	70	Supply air duct	23	31	43	46	41	33	22	18	53
		Extract air duct	26	31	42	43	33	29	21	18	
		Cabinet									
162	100	Supply air duct	28	33	44	48	33	35	23	18	55
		Extract air duct	29	34	44	51	37	31	23	18	
		Cabinet									
216	70	Supply air duct	28	33	44	54	46	37	28	18	57
		Extract air duct	27	33	43	52	39	33	27	18	
		Cabinet									
216	100	Supply air duct	28	35	45	55	46	38	29	18	56
		Extract air duct	32	34	44	52	40	34	28	18	
		Cabinet									

* Values for sound pressure calculated for a standard room with A = 10 m², H = 2.4 m and mean absorption 0.2.

13.4 w² Unit

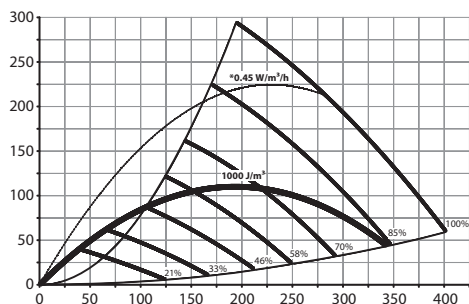


- ① Supply air
- ② Extract air
- ③ Exhaust air
- ④ Outdoor air
- ⑤ Condensate drain
- ⑥ Filter, extract air
- ⑦ Filter, supply air
- ⑧ Differential pressure for extract air
- ⑨ Differential pressure for supply air
- ⑩ Filter reset button

Weight of unit: 45 kg

Capacity

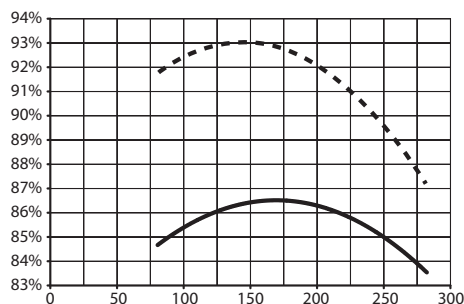
Pressure [Pa]



* 0.45 W/m³/h = "Passiv Haus" requirements.

Temperature ratio

η [%]



	Extract air	Fresh air	
-----	t = 21°C RH = 36%	t = -3°C RH = 80%	with condensation and 5% imbalance
—————	t = 25°C RH < 27%	t = 5°C	as acc. to EN308

Typical operation


Flow	Pext.	SFP	P ₁ tot.
160 m ³ /h	50 Pa	700 J/m ³	31 W
220 m ³ /h	70 Pa	832 J/m ³	51 W
220 m ³ /h	100 Pa	963 J/m ³	59 W
260 m ³ /h	70 Pa	892 J/m ³	64 W
260 m ³ /h	100 Pa	996 J/m ³	72 W
280 m ³ /h	90 Pa	1000 J/m ³	78 W

Sound data

Sound data			Frequency band, sound power Lw(A) [dB(A)]								Sound pressure Lp(A) (standard* room) [dB(A)]
Flow m³/h	Pressure Pa	Measured at:	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
126	50	Supply air duct	20	30	34	36	23	19	17	18	39
		Extract air duct	16	31	37	36	29	21	17	18	
		Cabinet									
162	70	Supply air duct	23	33	35	40	32	24	18	18	44
		Extract air duct	20	33	44	39	34	26	18	18	
		Cabinet									
162	100	Supply air duct	25	36	42	42	34	28	18	18	46
		Extract air duct	21	33	43	41	35	28	18	18	
		Cabinet									
216	70	Supply air duct	25	34	42	42	35	28	19	18	47
		Extract air duct	22	34	44	43	37	31	20	18	
		Cabinet									
216	100	Supply air duct	26	36	43	44	36	30	20	18	49
		Extract air duct	23	34	45	44	33	32	20	18	
		Cabinet									
250	100	Supply air duct	27	36	45	45	38	31	21	18	53
		Extract air duct	24	37	47	45	40	34	22	18	
		Cabinet									

* Values for sound pressure calculated for a standard room with A = 10 m², H = 2.4m and mean absorption 0.2.

14 Troubleshooting

Error	Cause	Solution
Alarm: Filter error	Air filters are dirty.	Exchange air filters.
Alarm: Battery low	Battery voltage in Air Dial is too low.	Replace batteries (4 x AAA) in Air Dial.
Alarm: No connection to CCM	Communication between Air Dial and CCM module has failed, typically caused by an obstacle between Air Dial and CCM module, e.g. steel piping, other steel objects, insulation material clad with aluminum foil, etc. Another cause can be other wireless appliances that does not conform to wireless standards (radio noise).	If an obstacle has been identified, move it. If this is not possible, move CCM module to a better location with a free 'line of sight'. If the error occurs due to other wireless appliances in your house, try switching these off in turn to identify the faulty device. If none of the above helps, please contact your installer.
Alarm: No connection via modbus	Cable between CCM module and unit is unplugged or defective.	Check cable and reconnect if necessary. If cable is connected, but error still occurs - contact installer.
Alarm: Room air too cold	Central heating system is not supplying heat. Room temperature is dropping, so the unit turn off to reduce involuntary heat loss. Alarm active if Air Dial measures a room temperature below +10°C.	Check if heating system is functional. If the problem can not be solved, contact plumber/installer. When error has been remedied, shut down and restart ventilation system to resume normal operation. Power can be disconnected by pulling power cable from system.
Alarm: Fire	One of four temperature sensors in Danfoss Air unit or temperature sensor in Air Dial remote control has detected a temperature higher than +70°C. Unit turns off until all sensors indicate < +70°C.	Examine all rooms, leave the house. When error has been remedied, shut down and restart ventilation system to resume normal operation. Power can be disconnected by pulling power cable from system.
Alarm: Sensor error	Temperature sensor in Danfoss Air unit or Air Dial is defective.	Contact installer. System continues to run, but with limited functionality.
Abnormally large negative pressure inside the house, doors binding	Discharge air flow is larger than supply air flow. Either balancing was not carried out correctly during set-up of the system or unit is in extreme defrost conditions (can occur at outdoor temperatures < -12°C).	Imbalance of flow should be 4-10% in favour of extract air, but if problems with doors binding is permanent, contact installer. If problems only arises during extreme winter condition, it is due to the integrated defrost function that reduces the supply air (hence not a defect, but an expected, and very rare occurrence).
Condensation in window frames	Air exchange is too low. Condensation occurs when humidity is high and surface temperatures are low, typically in bathrooms or utility rooms, where clothes are drip drying (some condensation in bathrooms following a shower is normal, but should disappear within half an hour).	Increase fan step (Manual mode) or change to Demand mode or Programme mode. Set Autoboot. on.
House temperatures are too high	House thermostats are set too high.	Turn down thermostats.
	Bypass is disabled on ventilation system.	Enable Bypass in Main menu > Bypass > Auto bypass .
Noise from unit	a-type unit: vibration noise may occur if unit is mounted directly onto joists. Unit should be mounted on a suitable platform.	Check that unit is mounted on platform, according to installation manual.
	w-type unit: vibration noise may occur if rubber spacers are not fitted between unit and wall and/or if silicone strip is not fitted onto wall bracket.	Check that rubber spacers and silicone strip are fitted, according to installation manual.
	Defective fan bearings will produce a 'grinding noise'.	If fan ball bearing is suspected to be defective, contact installer.
Noise from Air valves	Air flow is too high.	Noise is not a problem in a correctly sized and commissioned system. However, if air valves are closed (e.g. during cleaning), a hissing noise may occur.
	Pressure is too high over valve.	
	No silencer is fitted to main duct.	
Frost icon in display 	The system is in defrost mode, because low outdoor temperatures entail a risk of ice forming in the heat exchanger.	This is not an error, but a standard mode. The function stops automatically when the outdoor temperature rises.

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