



Teknisk Sheet

Flair 400

Varmegenvindingsaggregat

Dansk



Air for Life

Generelt

Flair 400 og Flair 400 Plus er en ventilationsenhed til afbalanceret ventilation af boliger med varmegenvinding.

Egenskaber:

- Maksimal kapacitet 400 m³/t
- Plastvarmeveksler med høj varmegenvindingsevne
- Filtre ISO Grov 60%
- Modulær elektrisk forvarmer
- Automatisk bypassventil
- Berøringsskærm
- Justerbar luftmængde
- Filterindikation på aggregatet og mulighed for filterindikation på multikontakten
- Intelligent frostbeskyttelse, inklusive modulopvarmning
- Lavt lydniveau
- Konstant flow-styring

Flair 400 fås i to typer:

- **"Flair 400"**
- **"Flair 400 Plus"**

Flair 400 Plus har, sammenlignet med standard Flair 400, en ekstra PCB med flere funktioner/tilslutningsmuligheder.

Denne installationsvejledning beskriver både standard Flair 400 og Flair 400 Plus.

Flair 400 og Flair 400 Plus fås i en **venstrehånds-** og **højrehånds-**versions; det er ikke muligt at konvertere en venstrehåndsmodel til en højrehåndsmodel eller omvendt.

For korrekte tilslutningskanaler og dimensioner (→).

Der foreligger mulighed for evt. senere installation af Plus-PCB, hvis styreoptionerne evt. ønskes udvidet.

Aggregatet leveres klar til tilslutning med et 230 V strømstik.

Teknisk information

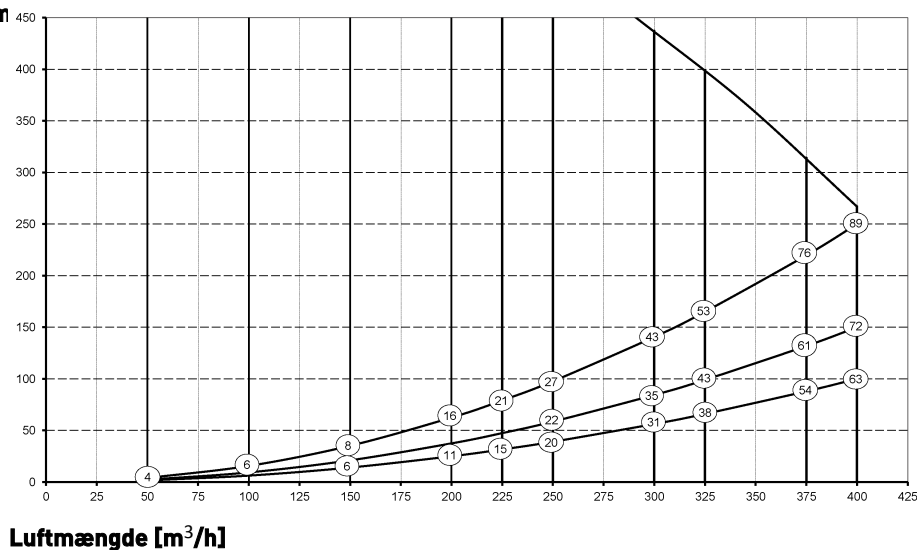
Teknisk information

Flair 400 (Plus)												
Forsyningsspænding [V/Hz]	230V/50Hz											
Dimensioner (b x h x d) [mm]	4-0 version						2-2 version					
	750 x 650 x 560						750 x710 x 560					
Kanaldiameter [mm] Ø	Ø180											
Udvendig diameter kondensafløb [mm]	Ø32											
Vægt [kg]	37											
Filterklasse	ISO Grov 60% (ISO ePM1.0 til luftforsyning mulig)											
Ventilatorindstilling (fabriksindstilling)	0		1		2		3		maks.			
Fabriksindstilling [m³/t]	50		100		200		300		400			
Tilladt modstand i kanalsystem [Pa]	2	4	6	16	25	63	56	141	100	250		
Nominel effekt (undtagen forvarmer) [W]	7.6	7.8	10.3	11.5	23.0	31.4	62.5	87.0	126.6	177.9		
Nominel strøm (undtagen forvarmer) [A]	0.12	0.12	0.15	0.16	0.25	0.33	0.58	0.77	1.01	1.38		
Maks. nom. strøm (med forvarmer tændt) [A]	6											
Cos φ	0.270	0.272	0.300	0.310	0.369	0.410	0.470	0.493	0.545	0.560		
Lydintensitet												
Ventilatorkapacitet [m3/t]					150		250		350		400	
Lydintensitetsniveau Lw (A)	Statisk tryk [Pa]				25		50		100		100	
	Lyddudstråling fra kabinet" [dB(A)]				37		43,5		52		55	
	Udsugning (Fraluft) [dB(A)]				43,5		46,5		51		61	
	Indblæsning (Tilluft) [dB(A)]				50		58		69,5		71	

*) Kanalstøj inklusive slutkorrektion.

I praksis kan værdien afvige med 1dB(A) gennem målingstolerancer.

Modstand i kanalsystem [Pa]



Bemærk:

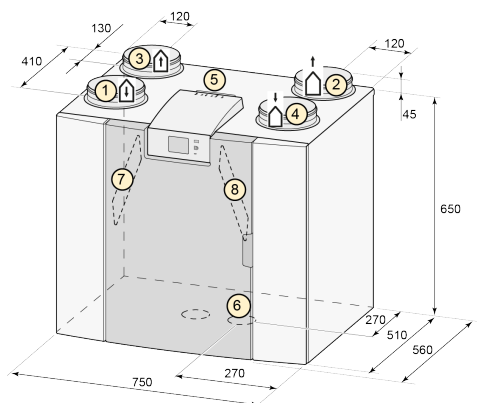
Den angivne værdi i cirklen er kapaciteten (i watt) pr. ventilator.

Tilslutninger og dimensioner

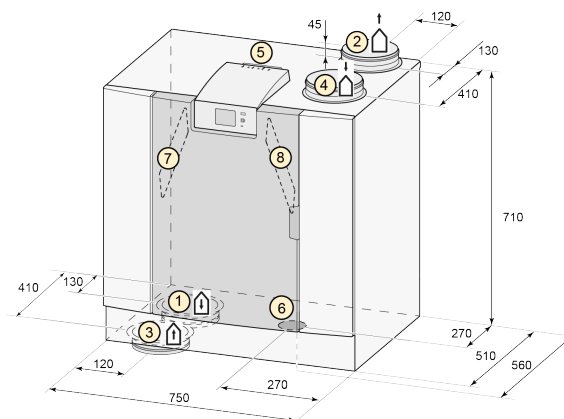
Flair aggregatet er tilgængelig i en venstrehånds- og en højrehåndsversion. Ved en venstrehåndsversion er varmeudsugning og -indblæsning (fra bolig 4 og til bolig 3) på venstre side af aggregatet; kondensafløbet monteres derefter i højrehåndsåbningen under aggregatet. Ved en højrehåndsversion er varmeudsugning og -indblæsning (3 og 4) på aggregatets højre side.

Venstrehåndsversion

4-0 forbindelser

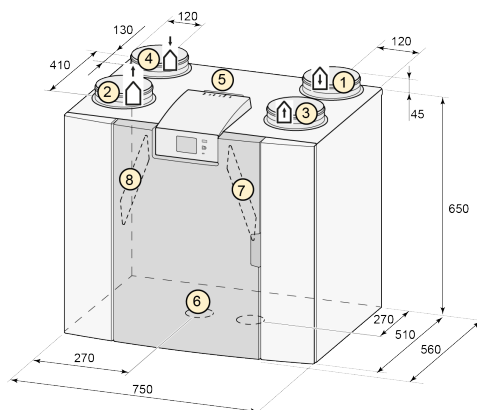


2-2 forbindelser

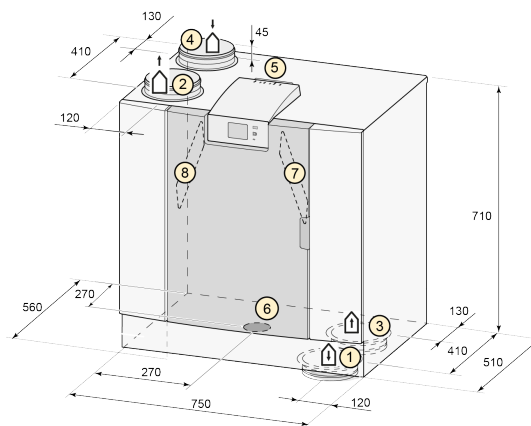


Højrehåndsversion

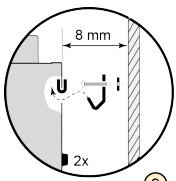
4-0 forbindelser



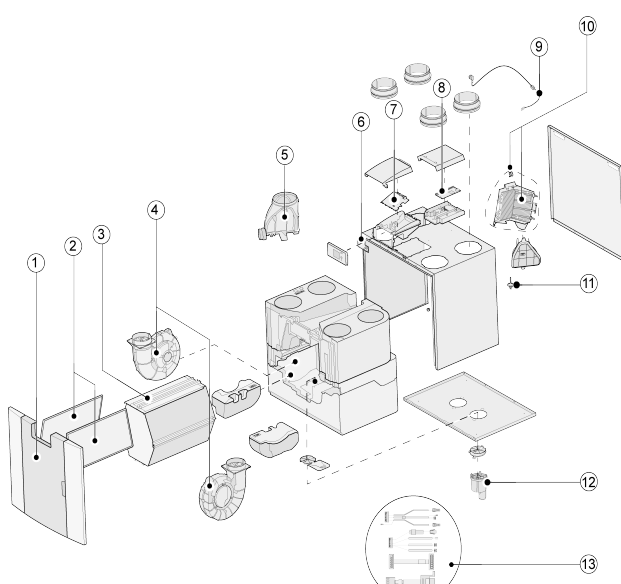
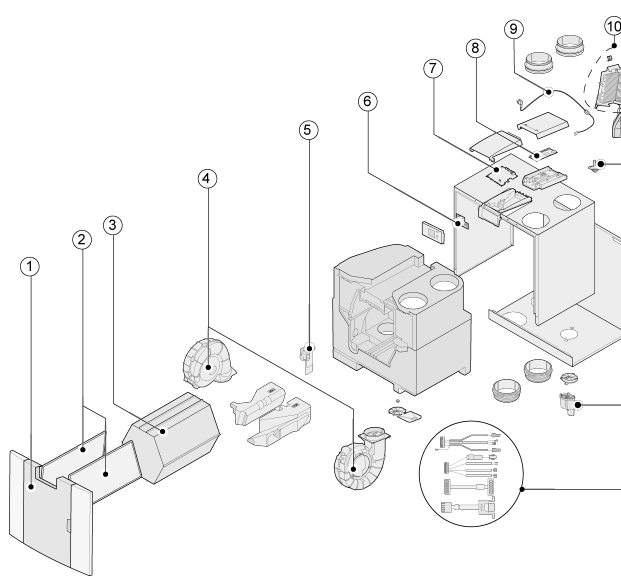
2-2 forbindelser



Alle dimensioner er i millimeter. Diameter på alle kanaltilslutninger er 180 mm

1	Indblæsning		2	Afkast		3	Udsugning		4	Indtag	
5	Elektriske tilslutninger										
6	Vandlåstslutning										
7	Udsugningsfilter										
8	Indblæsningsfilter										
9	Montering										

Serviceartikler

4-0 Version		2-2 Version
		
Nr.	Artikelbeskrivelse	Artikelkode
1	Frontpanelet komplet	532763
2	Filtre (2 styk) ISO Grov 60%	532716
3	Varmevæksler	532754
4	Ventilator (1 styk)	532770
5	Bypassventil med motor komplet (4-0 version)	532760
	Bypass motor komplet (2-2 version)	531778
6	Skærm PCB UBP-2	532752
7	Basis PCB UWA2-B	532750
8	Plus PCB UWA2-E (kun relevant ved Plus-version)	532751
9	Strømkab og -kabel 230 V *	532756
10	Intern forvarmer inkl. maks. sikkerhed	532761
11	Temperatursensor NTC 10K	531775
12	Kondensator	532762
13	Kabelsæt	532767

* Strømkablet er udstyret med et printkortstik. Når du udskifter det, skal du altid bestille et andet strømkabel fra Brink.
For at forhindre farlige situationer må en beskadiget strømforbindelse kun udskiftes af en kvalificeret ekspert.

Certifikater

Overensstemmelseserklæring

Overensstemmelseserklæring

Fabrikant: Brink Climate Systems B.V.

Adresse: Postbus 11
NL-7950 AA, Staphorst, The Netherlands

Produkt: Varmegenvindingsapparatype:
Flair 400
Flair 400 Plus

Det ovenfor beskrevne produkt opfylder følgende direktiver:

- ◆ 2014/35 / EU (lavspændingsdirektivet)
- ◆ 2014/30 / EU (EMC-direktivet)
- ◆ RoHS 2011/65/EU (direktivet om farlige stoffer i elektrisk og elektronisk udstyr)
- ◆ 2009/125/EG (1253/1254 EU (EU ErP-direktivet))

Produktet er CE-mærket:



Staphorst, 24-11-2017

A handwritten signature in blue ink, appearing to read 'M. Schouten', is written over a horizontal line.

M. Schouten
Managing Director

1 ERP værdi Flair 400 (Plus)

Teknisk informationsblad Flair 400(Plus) i henhold til Ecodesign (ErP), nr. 1254/2014 (Bilag IV)					
Fabrikant:		Brink Climate Systems B.V.			
Model:		Flair 400 (Plus)			
Klimazone	Kontroltype	SEC-værdi i kWh/m²/a	SEC-klasse	Årligt elektricitetsforbrug (AEC) i kWh	Varme sparet årligt (AHS - Annual heating saved) i kWh
Gennemsnit	Manual	-40,68	A	258	4646
	tidskontrol	-41,33	A	237	4658
	1x sensor (RV/CO ₂ /VOC)	-42,54	A+	199	4684
	2 eller flere sensorer (RV/CO ₂ /VOC)	-44,65	A+	135	4735
Kold	Manual	-79,74	A+	795	9088
	tidskontrol	-80,50	A+	774	9113
	1x sensor (RV/CO ₂ /VOC)	-81,96	A+	736	9163
	2 eller flere sensorer (RV/CO ₂ /VOC)	-84,56	A+	672	9263
Varm	Manual	-15,68	E	213	2101
	tidskontrol	-16,26	E	192	2106
	1x sensor (RV/CO ₂ /VOC)	-17,33	E	154	2118
	2 eller flere sensorer (RV/CO ₂ /VOC)	-19,16	E	90	2141
Type af ventilationsenhed:		Balanceret boligventilationsaggregat med varmegenvinding			
Ventilator:		EC-ventilator med uendelig variabel kontrol			
Type af varmeveksler:		Rekuperativ modstrømsvarmeveksler i plast			
Termisk effektivitet:		92 %			
Maksimal luftmængde:		400 m³/h			
Maksimal nominel effekt:		193 W			
Lydintensitetsniveau Lwa:		50 dB(A)			
Referenceluftmængde:		280 m³/h			
Referencetryk:		50 Pa			
Specifik strømindgang (SEL):		0,17 Wh/m³			
Kontrolfaktor:		1,0 i kombination med multikontakt			
		0,95 i kombination med tidskontrol			
		0,85 i kombination med 1 sensor			
		0,65 i kombination med 2 eller flere sensorer			
Lækage*	Intern	2,85 %			
	Ekstern	2,85 %			
Position snavset filterindikation:		På aggregatets skærm/på multikontakten (LED)/ på Brink Air Control. Bemærk! For optimal energieffektivitet og korrekt drift er det nødvendigt med regelmæssig filterinspektion, rengøring eller udskiftning.			
Internetadresse for montagevejledning:		http://www.brinkclimatesystems.nl/nl/professionals			
Bypass:		Ja, 100% bypass			

* Målinger udført af TZWL i henhold til EN 13141-7 standarden

Klassifikation fra 1. januar 2016	
SEC-klasse ("Gennemsnitlig klimazone")	SEC i kWh/m ² /a
A+ (mest effektiv)	SEC < -42
A	-42 ≤ SEC < -34
B	-34 ≤ SEC < -26
C	-26 ≤ SEC < -23
D	-23 ≤ SEC < -20
G (mindst effektiv)	-20 ≤ SEC < -10

EN13141-7:2010 erklæring

KF.82.06.268.AD.01
13.12.18



Declaration of conformity regarding the determination of energetic efficiency according to EN 13141-7:2011-01

On behalf of Brink Climate Systems B.V. the determination of energetic efficiency was conducted by Europäisches Testzentrum für Wohnungslüftungsgeräte (TZWL) e. V. in Dortmund, Germany.

Tests were carried out according to:

- EN 13141-7:2010; Ventilation for buildings - Performance testing of components/products for residential ventilation - Part 7: Performance testing of a mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for single family dwellings

Technical data of the tested unit:

Manufacturer:	Brink Climate Systems B.V.
Type:	Flair 400 4/0 R EU
Serial Number:	431001184001
Year of construction:	2018
Power supply:	230 V ~ 50 Hz
CE-Label:	Yes
Maximum volume flow:	400 m³/h

Results, energetic efficiency 7°C:

Air flow [m³/h]	Temperature ratio, supply air $\eta_{h,su}$ [%]	Total electric power consumption P_E [W]	Specific electric power consumption [W/m³/h]
50	97,3	10,8	0,22
279	92,1	46,5	0,17
400	88,5	113,0	0,28

Results, energetic efficiency 2°C:

Air flow [m³/h]	Temperature ratio, supply air $\eta_{h,su}$ [%]	Total electric power consumption P_E [W]	Specific electric power consumption [W/m³/h]
50	100,2*	10,9	0,22
279	93,5	53,1	0,19
397	92,5	119,4	0,30

*Massflow corrected in order to DIN EN 13141-7

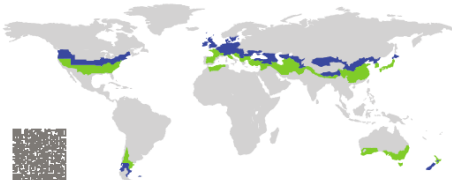
Results of performance tests of aerodynamic characteristics, of heat recovery characteristics and of the effective power consumption are taken from tests with number M.82.06.268.AD.

Passivhus Certifikat

CERTIFICATE

Certified Passive House Component
Component-ID 1362vs03 valid until 31st December 2019

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category: **Air handling unit with heat recovery**
Manufacturer: **Brink Climate Systems B.V.**
Netherlands
Product name: **Brink Flair 400**

Specification: Airflow rate < 600 m³/h
Heat exchanger: Recuperative

This certificate was awarded based on the product meeting the following main criteria

Heat recovery rate $\eta_{HR} \geq 75\%$
Specific electric power $P_{el,spec} \leq 0.45 \text{ Wh/m}^3$
Leakage < 3%
Comfort Supply air temperature $\geq 16.5^\circ\text{C}$ at outdoor air temperature of -10°C

Airflow range
70–313 m³/h
Heat recovery rate
$\eta_{HR} = 89\%$
Specific electric power
$P_{el,spec} = 0.20 \text{ Wh/m}^3$

¹⁾ At an airflow of 65 m³/h, a heat recovery of $\eta_{HR} = 94\%$ is reached.
²⁾ At an airflow of 175 m³/h, the specific electric power $P_{el,spec} = 0.18 \text{ Wh/m}^3$.



www.passivehouse.com

Brink Climate Systems B.V.
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Passive House comfort criterion

At an outdoor air temperature of -10°C a supply air temperature higher than 16.5°C is achieved by use of an internal and additional external electric preheater. The criterion is therefore met.

Efficiency criterion (heat recovery rate)

The effective heat recovery rate is measured at a test facility using balanced mass flows of the outdoor and exhaust air. The boundary conditions for the measurement are documented in the testing procedure.

$$\eta_{HR} = \frac{(\theta_{ETA} - \theta_{EHA}) + \frac{P_{el}}{\dot{m} \cdot c_p}}{(\theta_{ETA} - \theta_{ODA})}$$

With
 η_{HR} Heat recovery rate in %
 θ_{ETA} Extract air temperature in $^\circ\text{C}$
 θ_{EHA} Exhaust air temperature in $^\circ\text{C}$
 θ_{ODA} Outdoor air temperature in $^\circ\text{C}$
 P_{el} Electric power in W
 $\dot{m}$ Mass flow in kg/h
 c_p Specific heat capacity in Wh/(kgK)

Heat recovery rate
$\eta_{HR} = 89\%$

Efficiency criterion (electric power)

The overall electrical power consumption of the device is measured at a test facility at an external pressure of 100 Pa (50 Pa, respectively, for the intake and outlet). This includes the general electrical power consumption for operation and control but not for frost protection.

Specific electric power
$P_{el,spec} = 0.20 \text{ Wh/m}^3$

Efficiency ratio

The efficiency ratio provides information about the overall energy performance of the respective ventilation unit. It specifies the achieved reduction in ventilation heat losses by using a ventilation unit with heat recovery rather than without.

Efficiency ratio
$\epsilon_L = 0.74$

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Brink Flair 400

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Leakage

The leakage airflow must not exceed 3% of the average airflow of the unit's operating range.

Internal leakage	External leakage
1.30%	1.10%

Settings and airflow balance

It must be possible to adjust the balance of airflows at the unit itself (either between the exhaust and the outdoor airflows or between the supply and the extract airflows, if the unit is respectively placed inside or outside of the insulated thermal envelope of the building).

- This unit is certified for airflow rates of 70–313 m³/h.
- Balancing the airflow rates of the unit is possible.
- The user should have at least all the following setting options:
 - ✓ Switching the system on and off.
 - ✓ Synchronized adjustment of the supply and extract airflows to basic ventilation (70–80 %), standard ventilation (100 %) and increased ventilation (130 %) with a clear indication of the current setting.
- The device has a standby power consumption of 3.90 W. The target value of 1 W was exceeded. The device should be equipped with an additional external switch so that it can be disconnected from the mains, if required.
- After a power failure, the device will automatically resume operation.

Acoustical testing

The required limit for the sound power level of the device is 35 dB(A) in order to limit the sound pressure level in the installation room. The sound level target value of less than 25 dB(A) in living spaces and less than 30 dB(A) in functional spaces must be ensured by installing commercial silencers. The following sound power levels are met at an airflow rate of 298 m³/h:

Device	Duct			
	Outdoor	Supply air	Extract air	Exhaust air
51.0 dB(A)	56.5 dB(A)	65.5 dB(A)	59.5 dB(A)	63.0 dB(A)

- The unit does not fulfil the requirements for the sound power level. The unit must therefore be installed acoustically separated from living areas.
- One example of suitable silencers for supply and extract air ducts is mentioned in the detailed test report or can be obtained from the manufacturer. It is recommended to identify suitable silencers for each individual project.

Indoor air quality

This unit is equipped with following filter qualities by default:

Outdoor air filter	Extract air filter
ISO ePM1 50%	ISO Coarse 60%

Component-ID: 1362vs03

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Brink Flair 400

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Se også: Komplet Passivhus-certifikat

Flair 400 615037-A

SEL-værdi

