



Irene Reinholt Andersen

Fra: Tommi Wolff <two.dk@silhorko.dk>
Sendt: 3. april 2025 07:34
Til: Irene Reinholt Andersen
Cc: lv@langaa-vand.dk
Emne: SV: Trykfiltre Langå Vandværk
Vedhæftede filer: NSB_20-200_Datablad_DK5 (2).pdf; FLAIRMO Model K2A-25.pdf; Skyllepumpe_98149348_NB_50200210_AAF2AESBQQEIW3.pdf; Data sheet SV.201.2 Vacuum pumps_en.pdf; SE20_datablad_DK4.pdf

Du får ikke ofte mails fra two.dk@silhorko.dk. [Få mere at vide om, hvorfor dette er vigtigt](#)

Hej Irene

Hermed lidt oplysninger på det nye vandbehandlingsanlæg, der er installeret hos Langå Vandværk.

Trykfiltre

- 2 stk. trykfiltre med dysebund
- Driftes som for- og efterfilter
- Indeholder hver ca. 610 liter aktivt filtermateriale i form af nevtraco, demantex og kis
- Bemærk, at de installerede trykfiltre begge har fået reduceret svøbet med 300 mm i forhold til dem, der fremgår af databladet
- Kapacitet op til 8 m³/h

Skylleudstyr

- Becker skylleluftsblæser: 1,5 kW, volumenstrøm op til 90 m³/h v. 400 mbar
- Skyllepumpe: Grundfos NB 50-200/210, 2,2 kW, flow op til 44,46 m³/h v 13,17 mVs

Iltningsanlæg

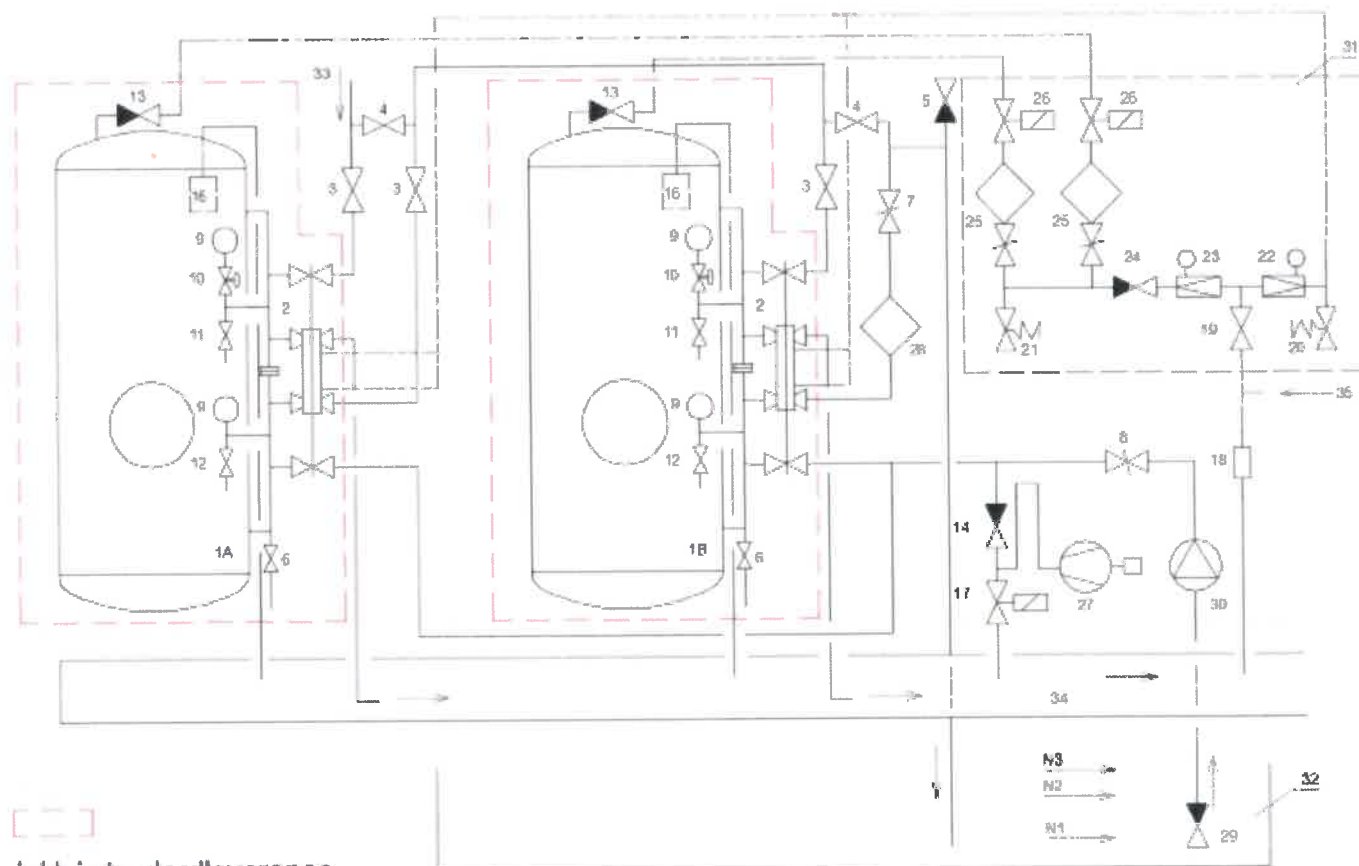
- Kompressor: K2A-25, oliefri, 25L tank, maks. Outletflow v. 5 bar er 75 l/min.
- Iltningspanel for manuel regulering af flow til ilt og styreluft

Styring

- Grundfos SE20 styring

Datablade er vedhæftet.

Eksempel på standardopsætning (PID):

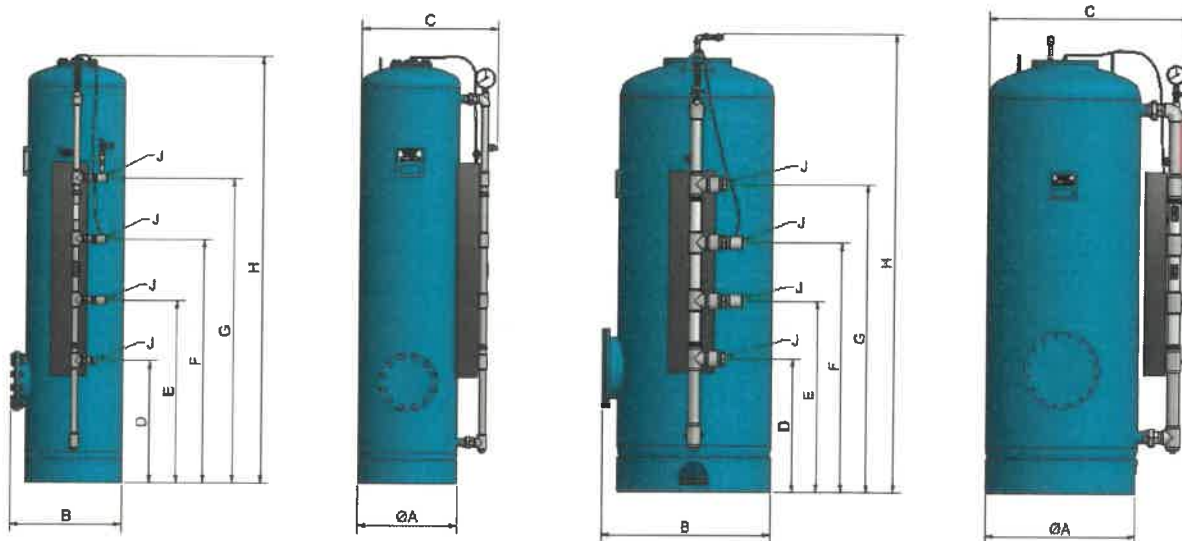


- 1A. Filterbeholder
- 1B. Filterbeholder
- 2. Rørsystem med pneumatik for 4 ventiler
- 3. Afspærringsventil, tilgang råvand
- 4. Omløbsventil
- 5. Vakuumbryder (luft ind)
- 6. Bundtømningsventil (option)
- 7. Reguleringsventil, afgang rent vand
- 8. Reguleringsventil, vandskyl
- 9. Manometer øverst, tilgang
- 10. Manometer nederst, afgang (kun på indvendigt belagte filtre)
- 11. Manometerprøvehane
- 12. Prøvehane, råvand
- 13. Kontraventil, iltningsluft
- 14. Kontraventil, skylleluft
- 15. Flowmeter, rent vand
- 16. Luftudlader
- 17. Drænventil (strømløs åben)
- 18. Vandudlader, iltnings- og styreluft
- 19. Afspærringsventil
- 20. Sikkerhedsventil, 6 bar
- 21. Sikkerhedsventil, åbningstryk = filterbeholderens maks. tryk
- 22. Reduktionsventil, styreluft
Indstilling: 5-6 bar
- 23. Reduktionsventil, iltningsluft
Indstilling: 1,1 x driftstryk
- 24. Kontraventil, iltningsluft
- 25. Flowmåler med regulering
- 26. Magnetventil, iltningsluft
- 27. Blæser, skylleluft, med overtryksventil og indsugningsfilter

- 28. Flowmåler, rent vand
- 29. Bundventil, skyllepumpe
- 30. Skyllepumpe
- 31. Ilt- og styreluftssystem
- 32. Rentvandsreservoir
- 33. Tilgang, råvand
- 34. Afløb til godkendt recipient
- 35. Tilgang, trykluft
- N3. Maks. niveau, stop påfyldning
- N2. Min. niveau, start påfyldning
- N1. Tørøbssikring af pumper

Automatisk trykfilter type NSB 20-200

Vandtemperatur maks. 50 °C | Rørsystem af galvaniseret stål | Beholder af stål | Udvendig overfladebehandling: Epoxymaling af høj kvalitet | Indvendig overfladebehandling: Ingen | Option: Indvendig og udvendig varmgalvanisering | Fremstillet og CE-mærket iht. trykbeholderdirektivet (PED)



Modul 20-40-60

Modul 80-130-170-200

Ydelse og vægt

Anlægsstørrelse	Ydelse [m³/h]	Transportvægt¹ ca. [kg]	Bruttovægt² ca. [kg]
20	1,2	100	215
40	2,4	140	410
60	3,6	200	710
80	4,8	320	1400
130	7,8	400	2100
170	10,2	520	3000
200	12	600	3500

1. Vægt ekskl. fyldning og vand, inkl. emballage

2. Vægt inkl. fyldning og vand

Målspecifikationer

Anlægsstørrelse	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H¹ [mm]	J Tilslutning
20	300	370	475	220	520	820	1120	1390	Rp ¾
40	400	470	575	370	670	970	1270	1680	Rp 1
60	480	550	655	600	900	1200	1500	2105	Rp 1
80	650	730	880	660	960	1260	1560	2310	Rp 1½
130	800	880	1030	690	990	1290	1590	2380	Rp 2
170	900	1010	1130	710	1010	1310	1610	2420	Rp 2
200	1000	1110	1230	730	1030	1330	1630	2450	Rp 2

1. Frihøjde over anlæg minimum 300 mm

FLAIRMO compressor model K2A-25

Oil-free compressor station based on DÜRR Technik
oil-free compressor aggregate with long lifetime mounted
in a very ruggedized and simple design with following features:

- Internal coated receiver
- Automatic condensate removal
- High protection class (IP 44)
- No or minimal service needed
- Wall mounting possible



Technical data		
Voltage / Frequency	Volt / Hz	230V / 50-60Hz
Motor	HP / kW	1,2 / 0,92
Max current consumption	A	4,9
Max. pressure	Bar / Psi	10 / 145
Inlet flow rate @ 0 bar Outlet flow rate @ 5 bar	l/min l/min	105 75
Dimensions	LxWxH (in mm)	630x250x670
Tank size	Litres	25
Duty Cycle	S1	100 %
Weight	Kg	36
Noise level	dB(A)/1m	66





Company name: Grundfos Water Treatment
Created by: Tommi Wolff
Phone: 81885861
Email: two.dk@silhorko.dk
Date: 13/11/2024

Project: Skylevandspumpe
Reference Number: SO37888

Client: Østfyn VVS og Energiservice
Client Number: 5000010704
Contact: Poul Rasmussen

Qty.	Description
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1	NB 50-200/210 AAF2AESBQQEIW3
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Note! Product picture may differ from actual product

Product No.: [98149348](#)

Non-self-priming, single-stage, centrifugal volute pump designed according to ISO 5199 with dimensions and rated performance according to EN 733 (10 bar). Flanges are PN 16 with dimensions according to EN 1092-2. The pump has an axial suction port, radial discharge port, horizontal shaft and a back pull-out design enabling removal of the motor, motor stool, cover and impeller without disturbing the pump housing or pipework.

The unbalanced rubber bellows seal is according to DIN EN 12756.

The pump is close-coupled to a fan-cooled asynchronous motor.

Controls:

Frequency converter: None

Pressure sensor: N

Liquid:

Pumped liquid: Water

Liquid temperature range: 248 .. 393 K

Selected liquid temperature: 293 K

Density: 998.2 kg/m³

Technical:

Pump speed on which pump data are based: 1465 rpm

Rated flow: 44.46 m³/h

Rated head: 13.17 m

Actual impeller diameter: 210 mm

Nominal impeller diameter: 200

Shaft seal arrangement: Single

Code for shaft seal: BQQE

Curve tolerance: ISO9906:2012 3B2

Bearing design: Standard

Materials:

Pump housing: Cast iron
EN-GJL-250
ASTM class 35

Wear ring: Brass

Impeller: Cast iron
EN-GJL-200
ASTM class 30

Internal pump house coating: CED

Shaft: Stainless steel
EN 1.4301
AISI 304



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Qty.	Description
1	Installation: Maximum ambient temperature: 328 K Maximum operating pressure: 1600 kPa Pipe connection standard: EN 1092-2 Size of inlet connection: DN 65 Size of outlet connection: DN 50 Pressure rating for connection: PN 16 Bearing lubrication: Grease Pump housing with feet: Yes Support block (Yes/No): N Electrical data: Motor type: SIEMENS Rated power - P2: 2.2 kW Mains frequency: 50 Hz Rated voltage: 3 x 220-240D/380-420Y V Rated current: 7.7/4.4 A Starting current: 840 % Cos phi - power factor: 0.83 Rated speed: 1465 rpm IE efficiency: IE3 86,7% IE Efficiency class: IE3 Motor efficiency at full load: 86.7 % Motor efficiency at 3/4 load: 87 % Motor efficiency at 1/2 load: 85.9 % Number of poles: 4 Enclosure class (IEC 34-5): IP55 Insulation class (IEC 85): F Motor No: 83V02208 Bearing insulation type N-end: N Others: Minimum efficiency index, MEI ≥: 0.70 Net weight: 81 kg Gross weight: 98 kg Shipping volume: 0.315 m³ Danish VVS No.: 386062206 Language on pump nameplate: GB

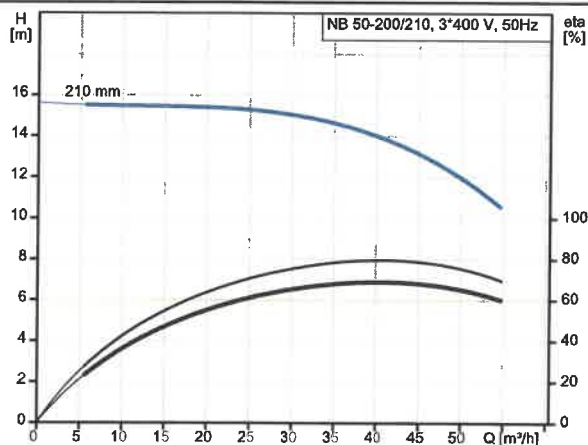
Company name: Grundfos Water Treatment
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Email: two.dk@silhorko.dk
Date: 13/11/2024

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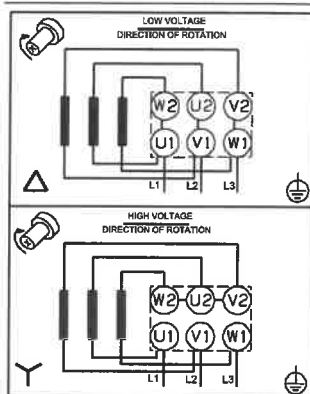
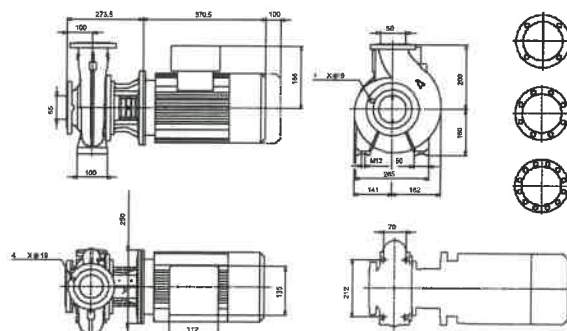
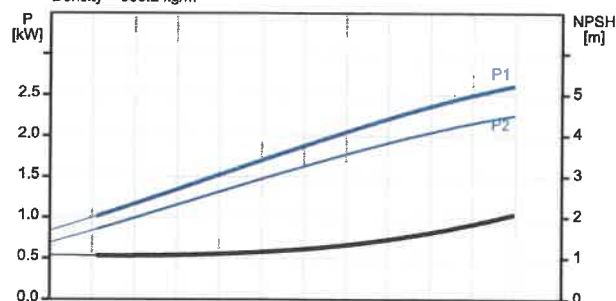
Client: Østfyn VVS og Energiservice
Client Number: 5000010704
Contact: Poul Rasmussen

Description	Value
General information:	
Product name:	NB 50-200/210 AAF2AESBQQEIW3
Product No:	98149348
EAN number:	5711490503142
Technical:	
Pump speed on which pump data are based:	1465 rpm
Rated flow:	44.46 m³/h
Rated head:	13.17 m
Actual impeller diameter:	210 mm
Nominal impeller diameter:	200
Shaft seal arrangement:	Single
Shaft diameter:	24 mm
Code for shaft seal:	BQQE
Curve tolerance:	ISO9906:2012 3B2
Pump version:	A
Bearing design:	Standard
Materials:	
Pump housing:	Cast iron
Pump housing:	EN-GJL-250
Pump housing:	ASTM class 35
Wear ring:	Brass
Impeller:	Cast iron
Impeller:	EN-GJL-200
Impeller:	ASTM class 30
Internal pump house coating:	CED
Material code:	A
Code for rubber:	E
Shaft:	Stainless steel
Shaft:	EN 1.4301
Shaft:	ANSI 304
Installation:	
Maximum ambient temperature:	328 K
Maximum operating pressure:	1600 kPa
Pipe connection standard:	EN 1092-2
Size of inlet connection:	DN 65
Size of outlet connection:	DN 50
Pressure rating for connection:	PN 16
Bearing lubrication:	Grease
Pump housing with feet:	Yes
Support block (Yes/No):	N
Connect code:	F2

Liquid:	
Pumped liquid:	Water
Liquid temperature range:	248 .. 393 K
Selected liquid temperature:	293 K
Density:	998.2 kg/m³
Electrical data:	
Motor type:	SIEMENS
Rated power - P2:	2.2 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 220-240D/380-420Y V
Rated current:	7.7/4.4 A
Starting current:	840 %



Pumped liquid = Water
 Liquid temperature during operation = 293 K
 Density = 998.2 kg/m³





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Client: Østfyn VVS og Energiservice
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Contact: Poul Rasmussen

Description	Value
Cos phi - power factor:	0.83
Rated speed:	1465 rpm
IE efficiency:	IE3 86,7%
IE Efficiency class:	IE3
Motor efficiency at full load:	86.7 %
Motor efficiency at 3/4 load:	87 %
Motor efficiency at 1/2 load:	85.9 %
Number of poles:	4
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	NONE
Motor No:	83V02208
Mount. design. acc. IEC 34-7:	IM V1
Bearing insulation type N-end:	N
Controls:	
Frequency converter:	None
Pressure sensor:	N
Others:	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	81 kg
Gross weight:	98 kg
Shipping volume:	0.315 m³
Danish VVS No.:	386062206
Language on pump nameplate:	GB

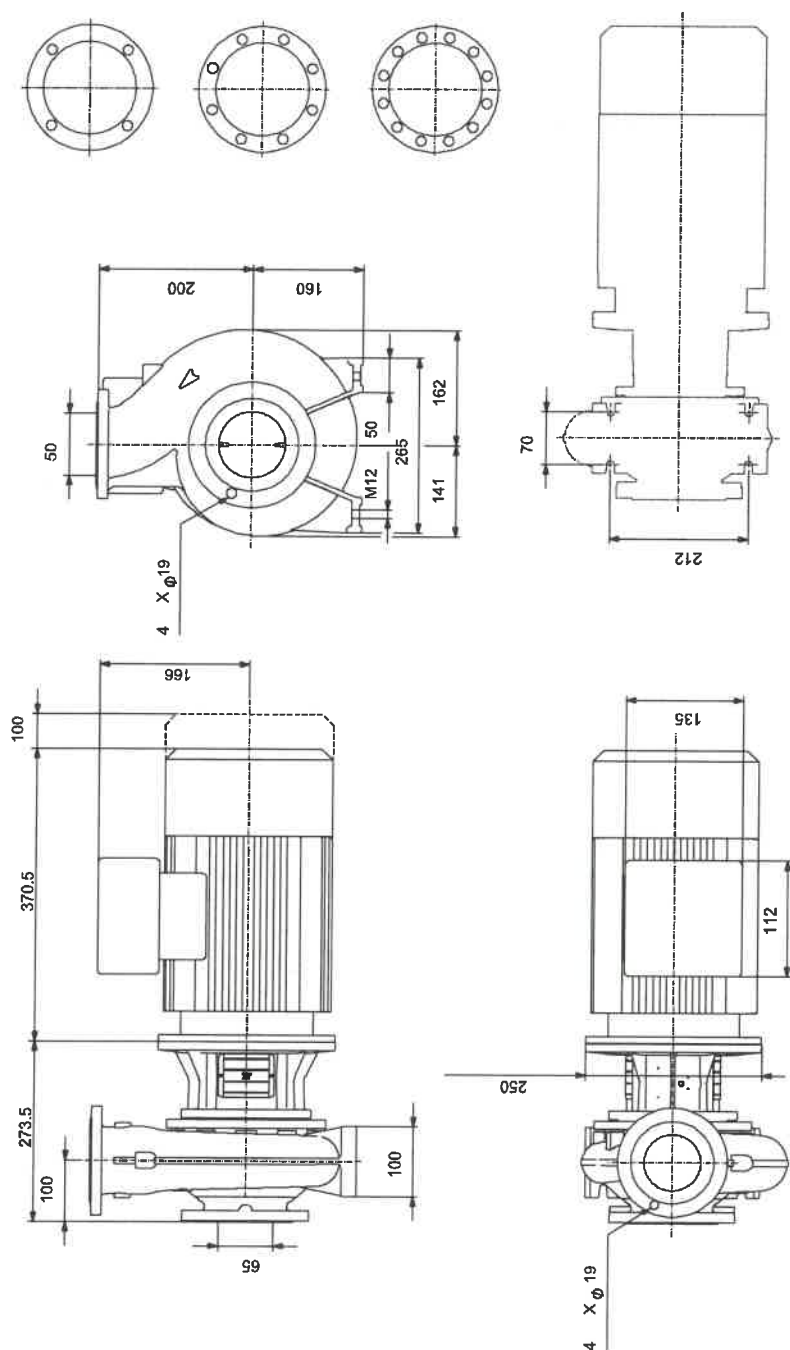


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98149348 NB 50-200/210 AAF2AESBQQEIW3 50 Hz



Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

DATA SHEET

SV 201/2

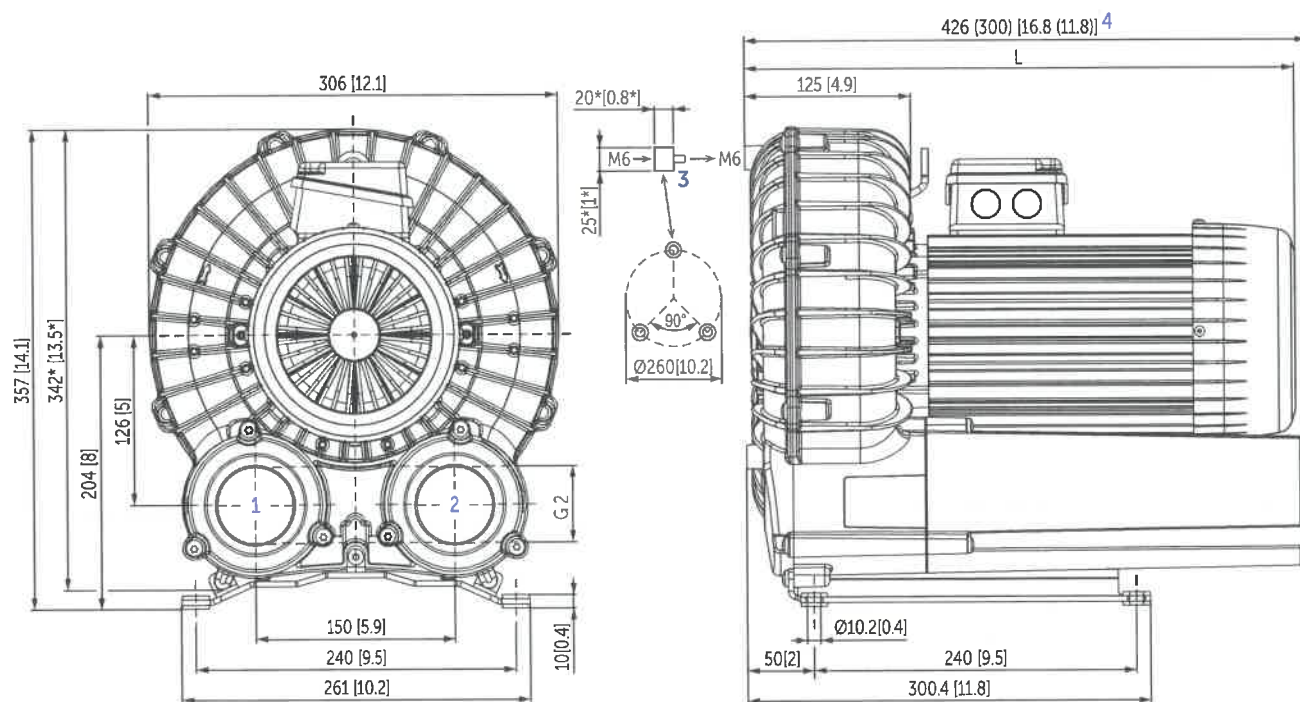
SIDE CHANNEL VACUUM PUMPS

double stage

air-cooled

MAKE IT BECKER.





1 Vacuum connection (G2)

2 Pressure connection (G2)

3 Optional vibration dampers (rubber buffer) for vertical installation

4 Optional with shorter silencers

* Device dimensions without pedestal under the silencer, with rubber buffers on the enclosure cover

▪ The motor illustration may vary

▪ Dimensions in mm [inch]

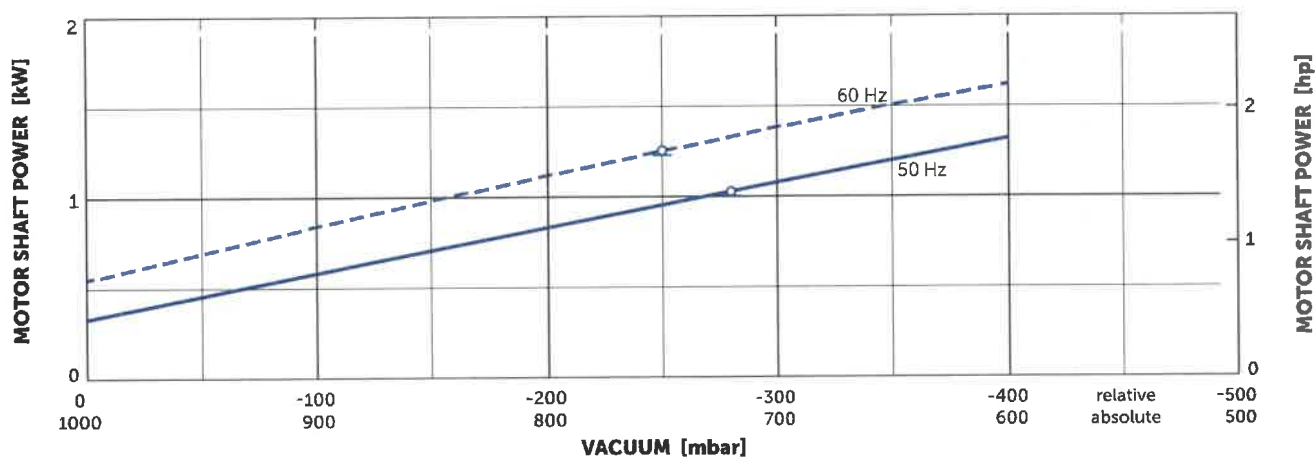
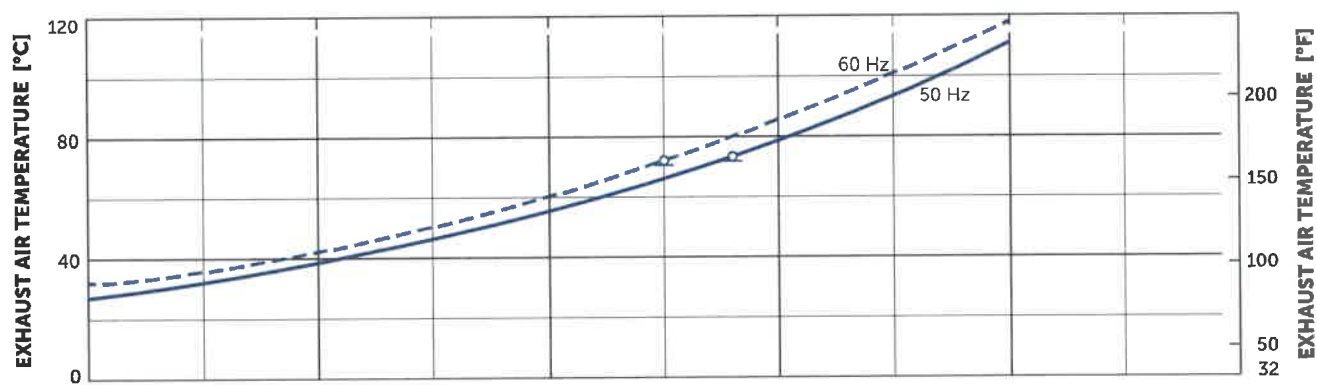
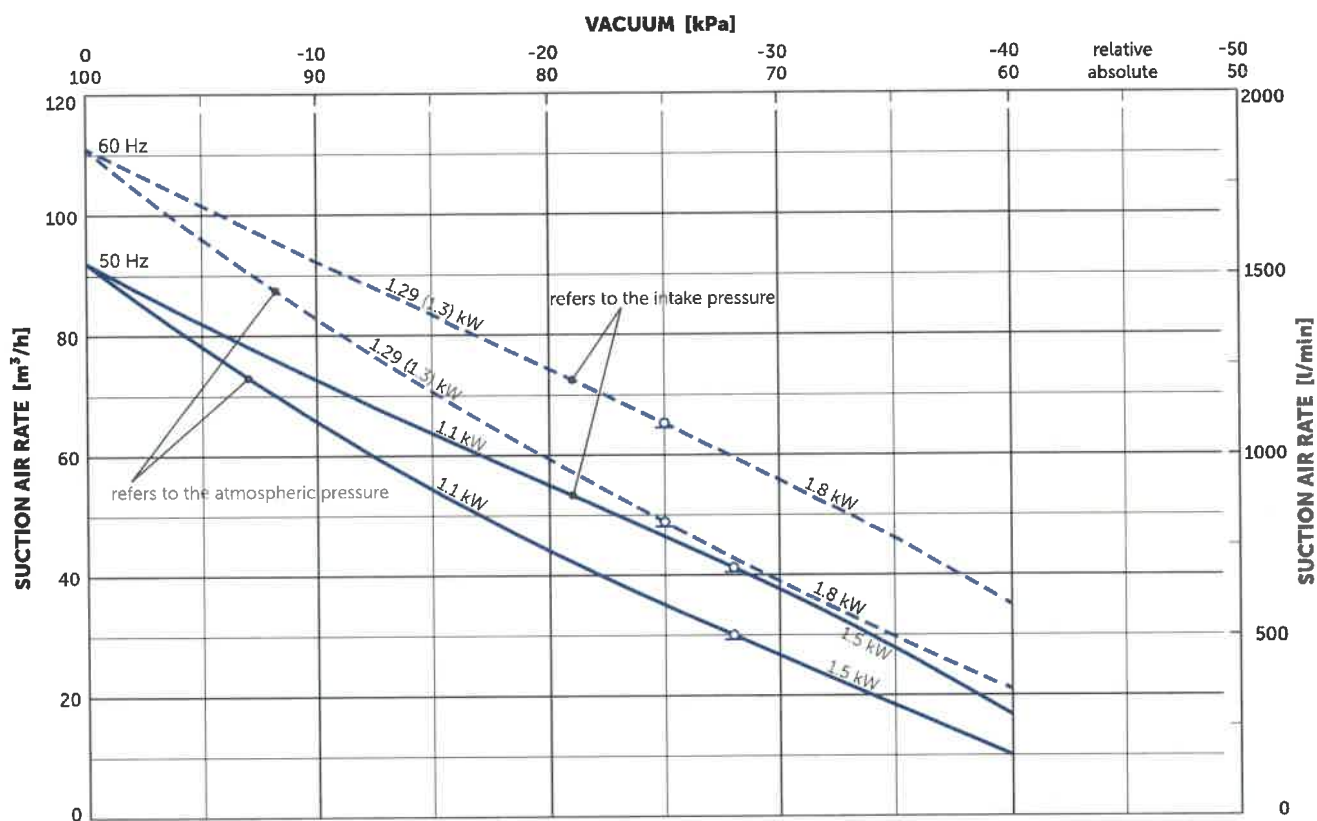
Suction air rate		Vacuum relative		Motors		Emission sound pressure level ¹⁾		Weight with motor
m ³ /h		mbar		kW		dB(A)		kg
50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
90	110	-280	-250	1.1	1.29/1.3	65.6 (-265 mbar)	68.7 (-265 mbar)	25.5
90	110	-400	-400	1.5	1.8	65.6 (-265 mbar)	68.7 (-265 mbar)	28.5

¹⁾ According to DIN EN ISO 11203, accuracy class of measurement: class 2, extended measurement uncertainty: 3 dB
1 m [39.4 inch] distance, at medium load, both connection sides piped

3~ Motors												L
#	50 Hz					60 Hz				Version		mm
	kW	V		rpm	A	kW	V	rpm	A			[inch]
01	1.1	Δ230/Y400	IE3	2870	4.3/2.5	1.29	Δ265/Y460	IE3	3460	4.3/2.5	UL • CSA	391
							Δ230/Y400		3395	4.7/2.7	IP55 • ISO F • bimetal	[15.4]
02						1.3	YY230/Y460	IE3	3465	4.8/2.4	UL • CSA • CC	427
							YY208/Y –	–	3430	5.05/ –	IP55 • ISO F • bimetal	[16.8]
03	1.1	Δ200/Y350	IE3	2875	5.0/2.9	1.29	Δ220/Y380–400	IE3	3462	5.0/2.9–3.0	IP55 • ISO F • bimetal	391
							Δ200/Y350		3405	5.2/3.0		[15.4]
04	1.5	Δ230/Y400	IE3	2897	5.6/3.25	1.8	Δ265/Y460	IE3	3487	5.6/3.25	UL • CSA • CC	431
							Δ230/Y400		3449	6.0/3.45	IP55 • ISO F • bimetal	[17.0]
05						1.8	YY230/Y460	IE3	3490	6.9/3.45	UL • CSA • CC	427
							YY208/Y –		3470	6.85/ –	IP55 • ISO F • bimetal	[16.8]
06	1.5	Δ200/Y350	IE3	2905	7.4/4.3	1.8	Δ220/Y380–400	IE3	3480	7.2/4.3–4.2	IP55 • ISO F • bimetal	431
							Δ200/Y350		3450	7.2/4.2		[17.0]

1~ Motors											L
#	50 Hz				60 Hz				Version		mm
	kW	V	rpm	A	kW	V	rpm	A			[inch]
01	1.1	230 ±10%	2855	6.7	1.3	230 ±10%	3375	7.9	UL • CSA		391
									IP55 • ISO F • bimetal		[15.4]
02	1.5	230 ±10%	2860	8.9	1.8	230 ±10%	3350	11.0	UL • CSA		431
									IP55 • ISO F • bimetal		[17.0]

▪ Type plate data on current consumption and rotation speed of the motors may vary. Tolerance -1.5/+2% in each case.



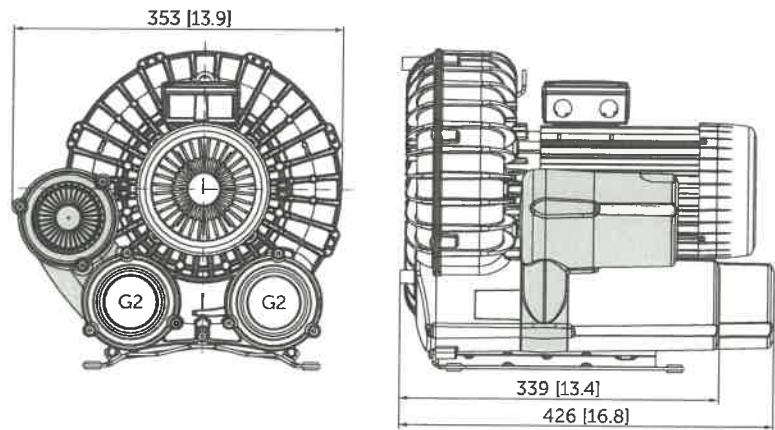
Reference data (atmosphere): 1000 mbar (100 kPa), 20°C (68°F)

Tolerance: ±10%

Temperature: Inlet air 0°C ... 40°C (32°F ... 104°F), Ambient air 3~ -10°C ... 40°C (14°F ... 104°F), Ambient air 1~ 15°C ... 40°C (59°F ... 104°F)

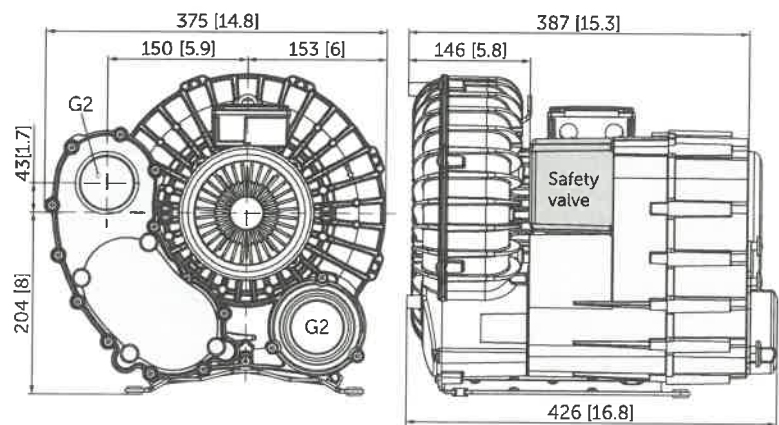
VARIANTS AND ACCESSORIES

VACUUM SAFETY VALVE



SUCTION FILTER

- Vacuum-sealed filter housing
- Paper or polyester insert
- Can be combined with vacuum safety valve

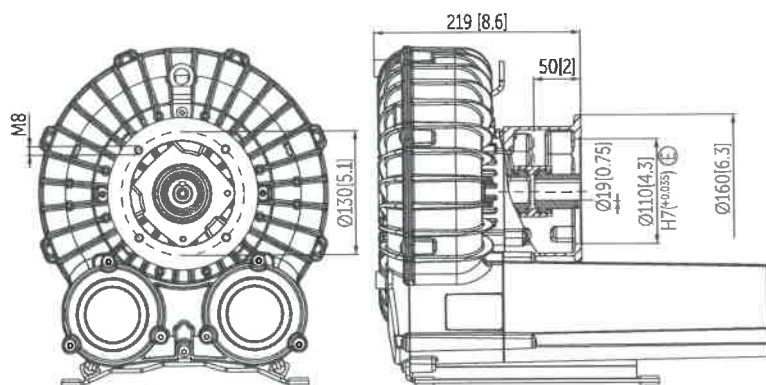


¹⁾ See separate data sheet

- Dimensions in mm [inch] – For other dimensions, see the figure on page 2.
- Possible combinations on request

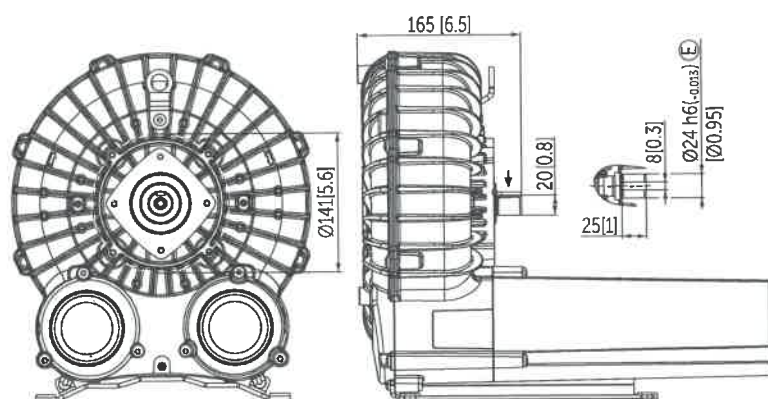
WITHOUT MOTOR

- With coupling for flange motor
- The motor must be supported!



WITHOUT MOTOR

- With free shaft end
- Max. 5600 rpm with V-belt pulley
- Possible performance data see VARIAIR SV 201/2 ¹⁾



OTHER VARIANTS AND ACCESSORIES

- With increased corrosion protection
- VARIAIR SV 201/2 with frequency inverter VAU4/4 for 100 Hz operation ¹⁾
- Sound proof box SH 18 ¹⁾

¹⁾ See separate data sheet

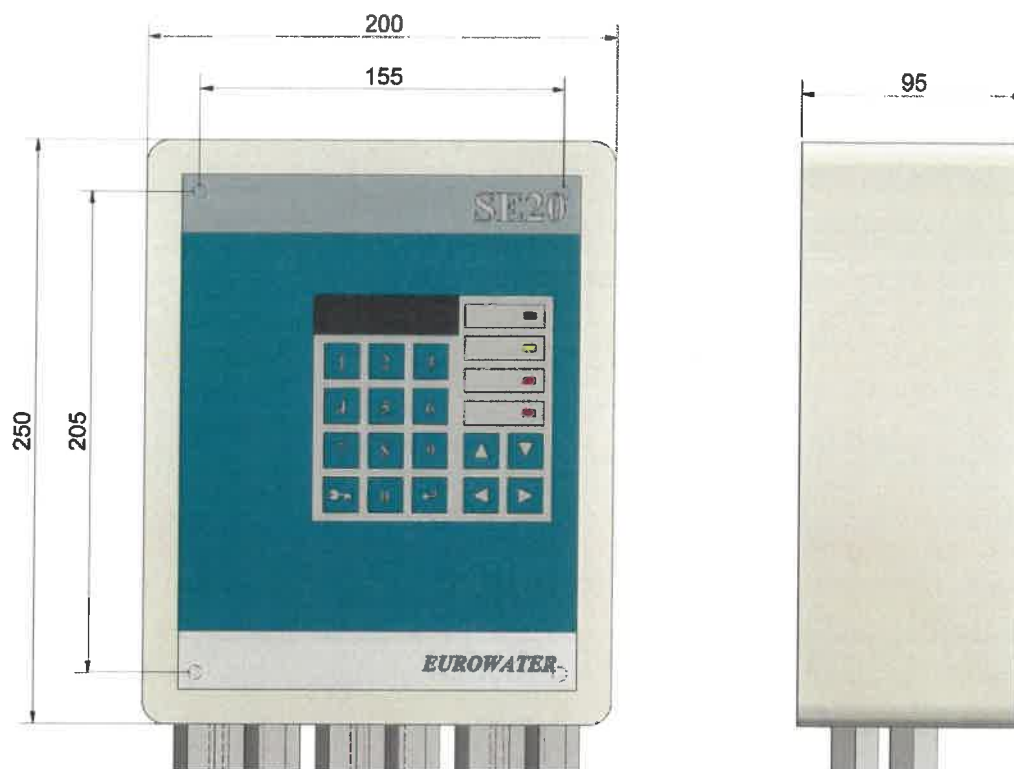
- Dimensions in mm [inch] – For other dimensions, see the figure on page 2.
- Possible combinations on request



Sound proof box SH 18

MAKE IT BECKER.

Styringspanel type SE20



DATA



Nominel driftsspænding	24.....VDC
Tilladelig forsyningsspænding	20,4-28,8.....VDC
Maks. eget strømforbrug	80..... mA ved 24 VDC
Digital indgang	12
Digital udgang, direkte	9
Maks. strøm	1..... A
Spænding	20,4-28,8.....VDC
Digital udgang, potentialfri	5
Maks. strøm	1..... A
Maks. spænding	30.....VDC
Total maks. strøm, udgange	5..... A
Kapslingsklasse	IP54
Installationstemperatur	0-50..... °C
Opbevaringstemperatur	-20 bis +60..... °C
Relativ fugtighed	10-80%, ikke-kondenserende

