

Installer manual SAM 40 Supply air module

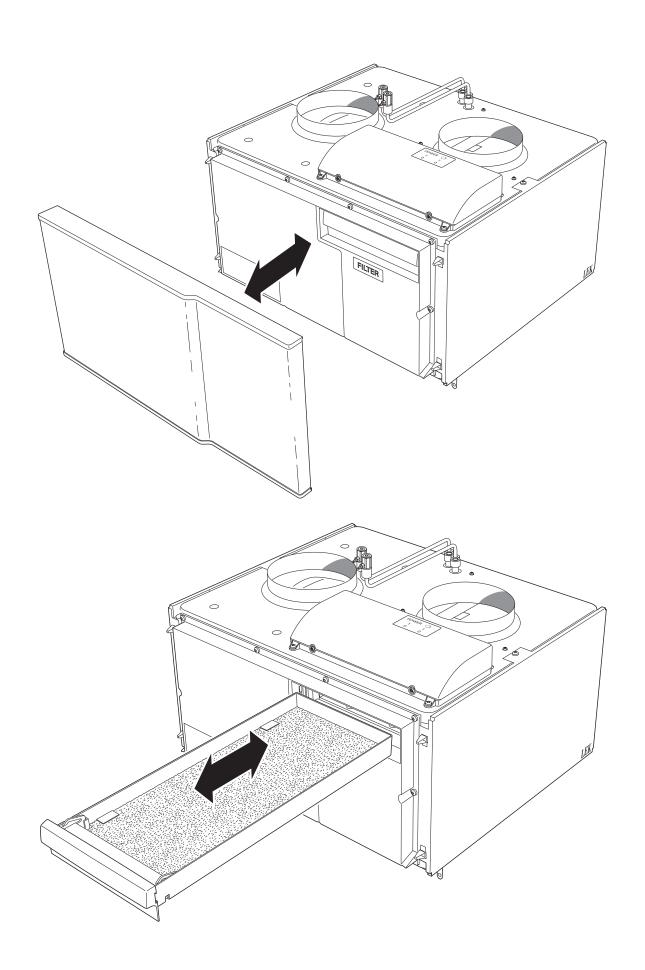


Table of Contents

1	Important information
2	Delivery and handling
	Transport
	Assembly
	Removing the covers
3	The design of the supply air mod- ule
4	Pipe and ventilation connections
	General pipe connections
	Symbol key
	Outline diagram
	Dimensions and pipe connections
	Mounting
	Heating medium side
	General ventilation connection
	Ventilation flow
	Adjusting ventilation

5	Electrical connections	17
	General	17
	Connections	17
6	Commissioning and adjusting	18
	Preparations	18
	Connecting to heating medium system	18
	Start-up and inspection	18
7	Disturbances in comfort	21
	Info menu	21
	Manage alarm	21
	Troubleshooting	21
8	Accessories	23
9	Technical data	24
	Dimensions and setting-out coordinates	24
	Technical specifications	
	Energy labelling	
	Electrical circuit diagram	
l.c	dov	20

SAM 40 Table of Contents

1 Important information

Safety information

This manual describes installation and service procedures for implementation by specialists.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Rights to make any design or technical modifications are reserved.

©NIBE 2015.

Symbols



NOTE

This symbol indicates danger to machine or person.



Caution

This symbol indicates important information about what you should observe when maintaining your installation.



TIP

This symbol indicates tips on how to facilitate using the product.

Marking

SAM 40 is CE marked and fulfils IP21.

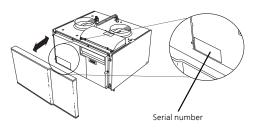
The CE marking means that NIBE ensures that the product meets all regulations that are placed on it based on relevant EU directives. The CE mark is obligatory for most products sold in the EU, regardless where they are made.

IP21 means that objects with a diameter larger than or equivalent to 12.5 mm cannot penetrate and cause damage and that the product is protected against vertically falling drops of water.

Serial number

Serial number

The serial number can be found at the bottom left inside the front cover.





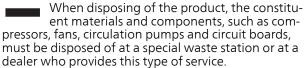
Caution

Always give the product's serial number (14 digits) when contacting your installer.

Recovery



Leave the disposal of the packaging to the installer who installed the product or to special waste stations.



To access the separate components, refer to the section that shows the construction of the product. No special tools are required for access.

Improper disposal of the product by the user results in administrative penalties in accordance with current legislation.

Country specific information

Installer manual

This installer manual must be left with the customer.

Inspection of the installation

In addition, fill in the page for the installation data in the User Manual.

Current regulations require the supply air module to be inspected before it is put into service. The inspection must be carried out by a suitably qualified person.

~	Description	Notes	Signature	Date
Ventilation (page 16)				
	Setting ventilation flow exhaust air			
	Setting ventilation flow supply air			
Hea	ating medium (page 12)			
	System flushed			
	Accessories bled			
	Check against output and pressure drop diagrams			
	Connected according to outline diagram			
Elec	ctricity (page 17)			
	Connections			
	Phase voltage			
	Supply connected 230 V			
	Connected communication			

Contact information

AT KNV Energietechnik GmbH, Gahberggasse 11, 4861 Schörfling

Tel: +43 (0)7662 8963-0 Fax: +43 (0)7662 8963-44 E-mail: mail@knv.at www.knv.at

CH NIBE Wärmetechnik c/o ait Schweiz AG, Industriepark, CH-6246 Altishofen

Tel: (52) 647 00 30 Fax: (52) 647 00 31 E-mail: info@nibe.ch www.nibe.ch

CZ Druzstevni zavody Drazice s.r.o, Drazice 69, CZ - 294 71 Benatky nad Jizerou

Tel: +420 326 373 801 Fax: +420 326 373 803 E-mail: nibe@nibe.cz www.nibe.cz

DE NIBE Systemtechnik GmbH, Am Reiherpfahl 3, 29223 Celle

Tel: 05141/7546-0 Fax: 05141/7546-99 E-mail: info@nibe.de www.nibe.de

DK Vølund Varmeteknik A/S, Member of the Nibe Group, Brogårdsvej 7, 6920 Videbæk

Tel: 97 17 20 33 Fax: 97 17 29 33 E-mail: info@volundvt.dk www.volundvt.dk

FI NIBE Energy Systems OY, Juurakkotie 3, 01510 Vantaa

Puh: 09-274 697 0 Fax: 09-274 697 40 E-mail: info@nibe.fi www.nibe.fi

FR NIBE Energy Systems France Sarl, Zone industrielle RD 28, Rue du Pou du Ciel, 01600 Reyrieux

Tel: 04 74 00 92 92 Fax: 04 74 00 42 00 E-mail: info@nibe.fr www.nibe.fr

GB NIBE Energy Systems Ltd, 3C Broom Business Park, Bridge Way, Chesterfield S41 9QG

Tel: 0845 095 1200 Fax: 0845 095 1201 E-mail: info@nibe.co.uk www.nibe.co.uk

NL NIBE Energietechniek B.V., Postbus 634, NL 4900 AP Oosterhout

Tel: 0168 477722 Fax: 0168 476998 E-mail: info@nibenl.nl www.nibenl.nl

NO ABK AS, Brobekkveien 80, 0582 Oslo, Postadresse: Postboks 64 Vollebekk, 0516 Oslo

Tel. sentralbord: +47 23 17 05 20 E-mail: post@abkklima.no www.nibeenergysystems.no

PL NIBE-BIAWAR Sp. z o. o. Aleja Jana Pawła II 57, 15-703 BIAŁYSTOK

Tel: 085 662 84 90 Fax: 085 662 84 14 E-mail: sekretariat@biawar.com.pl www.biawar.com.pl

RU © "EVAN" 17, per. Boynovskiy, Nizhny Novgorod

Tel./fax +7 831 419 57 06 E-mail: info@evan.ru www.nibe-evan.ru

SE NIBE AB Sweden, Box 14, Hannabadsvägen 5, SE-285 21 Markaryd

Tel: +46-(0)433-73 000 Fax: +46-(0)433-73 190 E-mail: info@nibe.se www.nibe.se

For countries not mention in this list, please contact Nibe Sweden or check www.nibe.eu for more information.

2 Delivery and handling

Transport

The supply air module must be transported and stored dry.

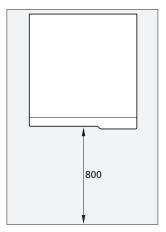
Assembly

SAM 40 is mounted free standing on brackets, alternatively above a VPB 200 (For VPB 300/VPBS 300 installation is with the help of brackets). Noise from the fan can be transferred to the brackets.

- Install the brackets to an outside wall, ideally in a room where noise does not matter, in order to eliminate noise problems. If this is not possible, avoid placing it against a wall behind a bedroom or other room where noise may be a problem.
- Wherever the unit is located, walls to sound sensitive rooms should be fitted with sound insulation.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.

Installation area

Leave a free space of 500 mm in front of the supply air module. All service on SAM 40 can be carried out from the front.





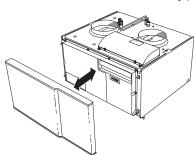
NOTE

Ensure that there is sufficient space (300 mm) above the supply air module for installing ventilation hoses.

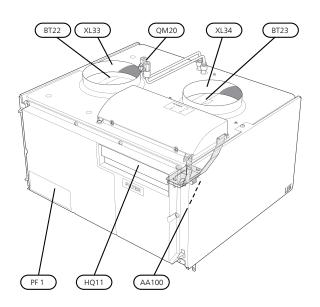
Removing the covers

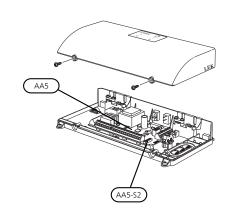
Front cover

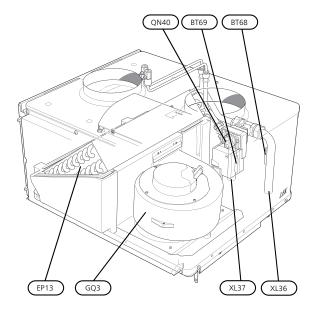
1. Remove the service cover by pulling it straight out.

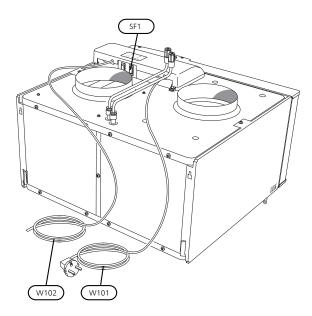


3 The design of the supply air module









Pipe connections

XL33	Ventilation connection supply air
XL34	Ventilation connection outdoor air
XL36	Connection, heating medium in
XL37	Connection, heating medium out 1

HVAC components

EP13	Supply air battery
QM20	Venting heating medium
QN40	Control valve heating medium

Sensors etc.

BT22	Temperature sensor, supply air
BT23	Temperature sensor, outdoor air
BT68	Temperature sensor, flow
BT69	Temperature sensor, return ¹

Electrical components

AA5 Accessory card AA5-S2 Dip switch

AA100 Joint card

SF1 Switch, position 0 - 1, main switch

W101 Cord with connection plug

W102 Control cable

Ventilation

GQ3 Supply air fan HQ11 Air filter supply air

Miscellaneous

PF1 Rating plate

Designations in component locations according to standard IEC 81346-1 and 81346-2.

¹ Not visible in the image

4 Pipe and ventilation connections

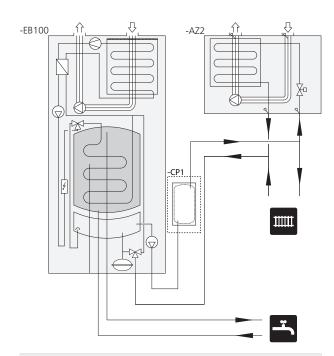
General pipe connections

Pipe installation must be carried out in accordance with current norms and directives.

Symbol key

Symbol	Meaning
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Control valve
	Shunt / shuttle valve
٩	Temperature sensor
\ominus	Expansion vessel
0	Circulation pump
0	Fan
0	Compressor
	Heat exchanger

Outline diagram





Caution

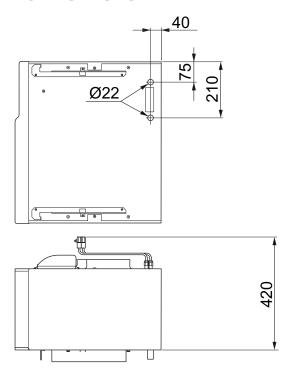
If the total circulating volume in the climate system (excluding the heat pump volume) falls below 40 litres, extra system volume is connected, for example volume vessel UKV (CP1) according to the outline diagram above.

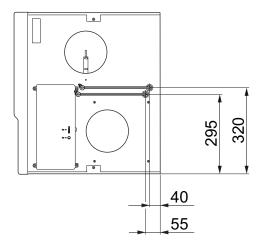


NOTE

If several climate systems (ECS 40/ECS 41) are present, SAM 40 must be connected in parallel with climate system 1. A circulation pump must be used to ensure the flow over SAM 40.

Dimensions and pipe connections





Mounting

Installing on brackets1. Install SAM 40 on brackets.

- 2. Connect heating medium and ventilation pipes.





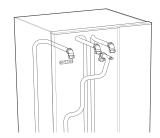
Installing on VPB 200



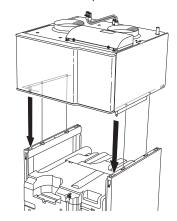
Caution

For connection of VPB 200 together with F750 docking kit DEW 40 is used.

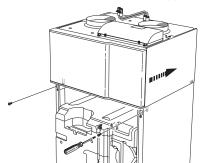
- 1. Remove the service cover from VPB 200.
- 2. Remove the top panel from VPB 200 (installed with 6 screws).
- 3. Install DEW 40 according to the instructions in the installation manual. The pipes in VPB 200 can be adjusted/replaced in such a way that SAM 40 can easily be installed above VPB 200.



4. Install SAM 40 from the top and slide into position.



5. Secure SAM 40 with the 2 screws supplied.



- 6. Connect heating medium and ventilation pipes.
- 7. Reinstall the service cover on VPB 200.

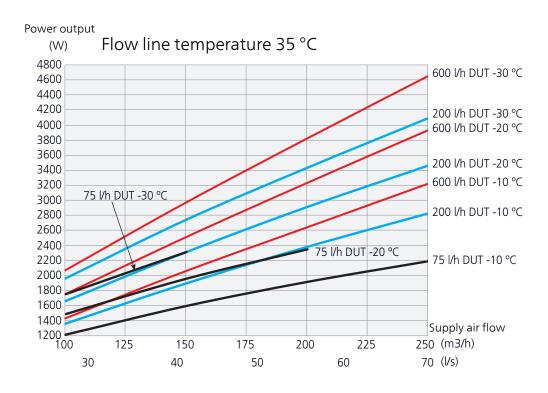
Heating medium side

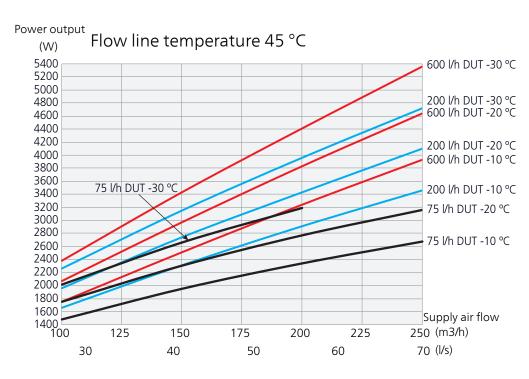
A water borne climate system with a volume of at least 20 litres of circulating water must be present for installation of SAM 40 to be possible. For the correct function of SAM 40 the total volume of the climate system (excluding the internal volume in F750) must exceed 40 litres of circulating water. This means that, if the volume of the climate system does not exceed 40 litres of circulating water, installation of volume vessel (NIBE UKV) is necessary.

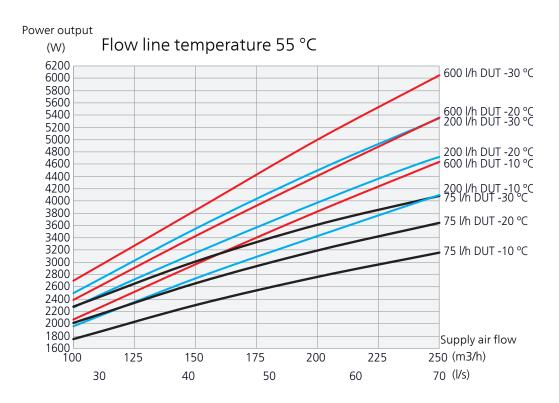
Dimensioning the system

- 1. Work from the water temperature at DUT (DVUT).
- 2. Work from the current supply air flow.
- 3. Work from the desired supply air temperature, then calculate the output that SAM 40 must give at DUT.
- 4. Determine the water flow across SAM 40 from the correct output diagram. NOTE! For supply temperatures that are not in one of the diagrams, an estimate (linear interpolation) can be carried out.
- 5. Work from the projected pressure drop (at the projected flow) in the water borne system, climate system 1.
- 6. Check in the pressure drop diagram that the working point is inside the grey working area.
- 7. Check that the pump capacity from F750 is sufficient for both the heating system and SAM 40.

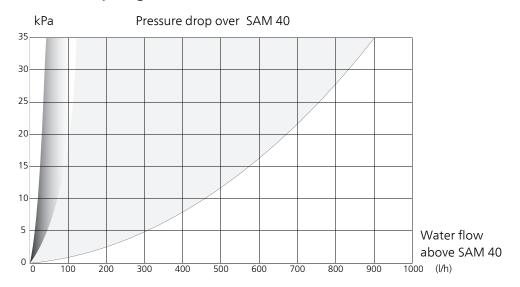
Output transfer to the supply air







Pressure drop diagram SAM 40



The diagram shows pressure drop across SAM 40 at different water flows. Note that the pressure drop is the same as that which prevails across the climate system 1.

Check that the working point is inside the grey working area. If the working point is inside the darker grey area to the left of the diagram, it can give an oscillating supply air temperature.



NOTE

Venting may be necessary on installation and after a period of use. Vent through vent valve (QM20).

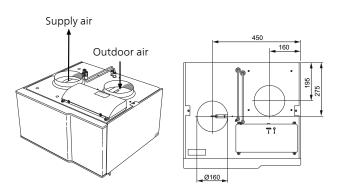
General ventilation connection

Ventilation installation must be carried out in accordance with current norms and directives.

To prevent fan noise being transferred to the supply air devices, it may be a good idea to install a silencer in the duct. This is especially important if there are supply air devices in bedrooms.

Connections must be made via flexible hoses, which must be installed so that they are easy to replace. The air should be routed to the outdoor air duct through an outside wall grille in the facade. The outer wall grille must be installed protected from the weather and must be designed so that no rain water can penetrate the facade. The outdoor air duct must be provided with diffusion-tight insulation over its entire length. Ensure that the condensation insulation is sealed at any joints and/or at lead-in nipples, silencers, roof cowls or similar.

Provision must be made for inspection and cleaning of the duct. Make sure that there are no reductions of cross-sectional area in the form of creases, tight bends etc, since this will reduce the ventilation capacity. The air duct system must be a minimum of air tightness class B.



Ventilation flow

The supply air flow must be lower than the exhaust air flow to prevent over pressure in the house.

Ensure that the ventilation openings are not blocked. Set the ventilation capacity in the heat pump's menu system (menu 5.1.6).

Adjusting ventilation

To obtain the necessary air exchange in every room of the house, the exhaust air device and the supply air device must be correctly positioned and adjusted and the fans in the heat pump and supply air module adjusted

Immediately after installation adjust the ventilation so that it is set according to the projected value of the house.

A defective ventilation installation may lead to reduced installation efficiency and thus poorer operating economy, and may result in moisture damage to the house.

5 Electrical connections

General

All electrical equipment is connected at the factory.

- Disconnect SAM 40 before insulation testing the house wiring.
- For the supply air module wiring diagram, see page 27.
- Signal cables to external connections must not be laid close to high current cables.
- If the supply cable is damaged, only NIBE, its service representative or similar authorised person may replace it to prevent any danger and damage.



NOTE

Electrical installation and service must be carried out under the supervision of a qualified electrician. Electrical installation and wiring must be carried out in accordance with the stipulations in force.

Connections

Connecting to F750

This section describes the electrical connection for controlling SAM 40 from NIBE F750.

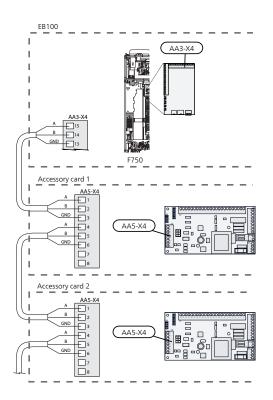
The heat pump switch must be in the "O" position and the switch on SAM 40 in position 0, before any work is carried out.

- Ensure that the products are completely disconnected from the power source. Remove the front hatch and protective cover to the input card on the heat pump according to the instructions in its Installer's manual.
- 2. Connect cable W102 to position X4 on the input board in the heat pump, according to the electrical wiring diagram on page 27. Use the cable lead-in in the heat pump when routing cables.

If several accessories are to be connected or are already installed, the adjacent wiring diagram must be followed.

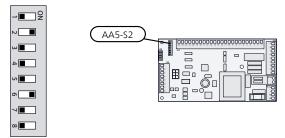
The first accessory board must be connected directly to the heat pump's terminal block AA3-X4. The following boards must be connected in series to the previous board.

- Fix external cable routing.
- Install the protective cover and the service cover according to the heat pump Installation manual.
- 5. Connect plug W101.



DIP switch

The DIP-switch (S2) on the accessory board (AA5) is set in the factory as below.



6 Commissioning and adjusting

Preparations

- 1. Check that the switch (SF1) for F750 is in position "(1)"
- Check that the filling valves (QM10) and (QM11) in the heat pump are fully closed.



Caution

Check the miniature circuit-breaker (FA1) in the heat pump. It may have tripped during transportation.

Connecting to heating medium system

- 1. Connect SAM 40 according to the outline diagram on page 10.
- 2. Fill with water using the filler valve (QM11) in F750.
- Vent the heating medium system with the vent valves (QM20) above SAM 40, and the vent valves in F750 and fill if necessary using the filler valve (QM11) in F750.

Start-up and inspection

Start-up



NOTE

There must be water in the climate system before the switch in F750 is set to "I".

- 1. Set switch (SF1) on SAM 40 in position "1".
- 2. Set the heat pump's switch (SF1) to "I".
- 3. Follow the instructions in the start guide in the heat pump display. If the start guide does not start when you start the heat pump, start it manually in menu 5.7.

Commissioning

The first time the heat pump is started a start guide is started. The start guide instructions state what needs to carried out at the first start together with a run through of the heat pump's basic settings.

The start guide ensures that the start-up is carried out correctly and cannot be bypassed. The start guide can be started later in menu 5.7.

This applies to a heat pump with approximately 4 kW rated output.

For a 15 kW heat pump the corresponding flow is from 0.09 l/s (324 l/h) to 0.14 l/s (504 l/h).



Caution

As long as the start guide is active, no function in the installation will start automatically.

The guide will appear at each installation restart until it is deselected on the last page.

Menu system

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 5.2 -system settings

Activating/deactivating of accessories.

Select: "ext sup air md"



Caution

This accessory may require a program software update in your F750.

The heat pump software must be version 3585R2 or later.

Setting the ventilation

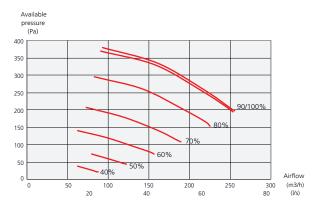
Ventilation must be set according to applicable standards. The supply air flow is adjusted so that it is 80% of the exhaust air flow. The setting is made in menu 5.1.6.

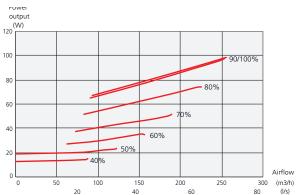
Even if ventilation is roughly set at installation it is important that a ventilation adjustment is ordered and permitted.



NOTE

Order a ventilation adjustment to complete the setting.

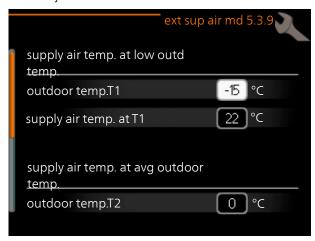




Setting of supply air temperature

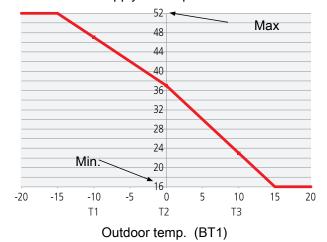
Set the supply air temperature in menu 5.3.9 (ext sup air md).

Note that when changing the supply air temperature, the settings for other parts of the climate system need to be adjusted.



At outdoor temperatures that lie between the stated points in the diagram below, the supply air temperature can be calculated linearly. The angle of the graph continues outside the stated points.

Supply air temperature



7 Disturbances in comfort

In most cases, the heat pump F750 notes operational interference (operational interference can lead to disturbance in comfort) and indicates this with alarms and shows action instructions in the display.

Info menu

All the heat pump measurement values are gathered under menu 3.1 in the heat pump menu system. Looking through the values in this menu can often simplify finding the source of the fault.

Manage alarm



In the event of an alarm, some kind of malfunction has occurred, which is indicated by the status lamp changing from green continuously to red continuously. In addition, an alarm bell appears in the information window.

Alarm

In the event of an alarm with a red status lamp a malfunction has occurred that the heat pump cannot remedy itself. In the display, by turning the control knob and pressing the OK button, you can see the type of alarm it is and reset it. You can also choose to set the heat pump to aid mode.

info / action Here you can read what the alarm means and receive tips on what you can do to correct the problem that caused the alarm.

reset alarm In most cases it is enough to select "reset alarm" to correct the problem that caused the alarm. If a green light illuminates after selecting "reset alarm" the alarm has been remedied. If a red light is still visible and a menu called "alarm" is visible in the display, the problem that caused the alarm remains. If the alarm disappears and then returns, see the troubleshooting section (page 21).

aid mode "aid mode" is a type of emergency mode. This means that the heat pump produces heat and/or hot water despite there being some kind of problem. This can mean that the heat pump's compressor is not running. In this case the immersion heater produces heat and/or hot water.



NOTE

To select aid mode an alarm action must be selected in the menu 5.1.4.



Caution

Selecting "aid mode" is not the same as correcting the problem that caused the alarm. The status lamp will therefore continue to be red.

Troubleshooting

If the operational interference is not shown in the display the following tips can be used:

Basic actions

Start by checking the following possible fault sources:

- That the heat pump is running or that the supply cable to SAM 40 is connected.
- Group and main fuses of the accommodation.
- The property's earth circuit breaker.
- The heat pump's miniature circuit breaker (FA1).
- The heat pump's temperature limiter (FD1).
- Correctly set load monitor (if installed).

Low hot water temperature or a lack of hot water

 The heat pump has temporarily prioritised supply air ventilation to prevent too low temperatures in the supply air coil.

Low room temperature

- Air in the heating medium system.
 - Vent SAM 40 using vent valve (QM20).
- Incorrect value set in supply air automatic control system.
 - Enter menu 5.3.9 (ext sup air md) and adjust the setting for the supply air temperature.

High room temperature

- Incorrect value set in supply air automatic control system.
 - Enter menu 5.3.9 (ext sup air md) and adjust the setting for the supply air temperature.

Low or a lack of ventilation

- Filter (HQ12) blocked.
 - Clean or replace the filter.
- The ventilation is not adjusted.
 - Order/implement ventilation adjustment.
- Supply air device closed, blocked or throttled down too much.
 - Check and clean the supply air device.

High or distracting ventilation

- Filter (HQ12) blocked.
 - Clean or replace the filter.
- The ventilation is not adjusted.
 - Order/implement ventilation adjustment.

Low supply air temperature

Air in the heating medium system.

- Vent SAM 40 using vent valve (QM20).
- Incorrect value set in supply air automatic control system.
 - Enter menu 5.3.9 (ext sup air md) and reduce the setting for the supply air temperature.

High supply air temperature

- Incorrect value set in supply air automatic control system.
 - Enter menu 5.3.9 (ext sup air md) and adjust the setting for the supply air temperature.

8 Accessories

Brackets

Wall mounting of SAM 40. Part no. 067 083

Buffer vessel UKV

UKV 40

Part no. 088 470

Top cabinet

Top cabinet for concealing the ventilation ducts.

345 mm 395-645 mm

Part no. 089 757 Part no. 089 758

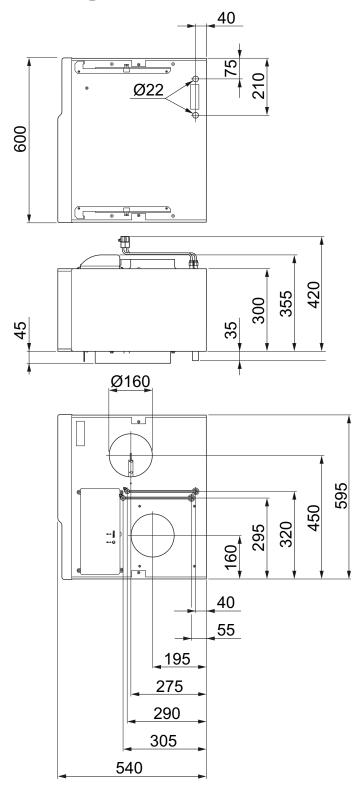
SAM 40 Chapter 8 | Accessories

23

9 Technical data

24

Dimensions and setting-out coordinates



Chapter 9 Technical data SAM 40

Technical specifications

Electrical data		
Supply voltage	V	230 V 50 Hz
Drive output actuator motor	W	1.5
Driving power fan	W	175
Enclosure class		IP21
Heating medium circuit		
Min pressure	MPa/bar	0.05/0.5
Max pressure	MPa/bar	0.25/2.5
Ventilation	,	
Max airflow	m³/h	300
Sound power level according to EN 12,102		
Sound power level $(L_{W(A)})^1$	dB (A)	45-50
Sound pressure levels		
Sound pressure level in the boiler room $(L_{(PA)})^2$	dB (A)	41-46
Pipe connections		
Heating medium ext Ø	mm	22
Hot water ext Ø	mm	22
Ventilation Ø	mm	160
Dimensions and weight		
Width	mm	600
Depth	mm	556
Height	mm	396
Weight	kg	31
Part No.		067 147

¹The value varies with the selected fan curve. For more detailed sound data including sound to channels visit www.nibe.eu.

SAM 40 Chapter 9 | Technical data

25

 $^{^2\,\}mbox{The}$ value can vary with the room's damping capacity. These values apply with a damping of 4 dB.

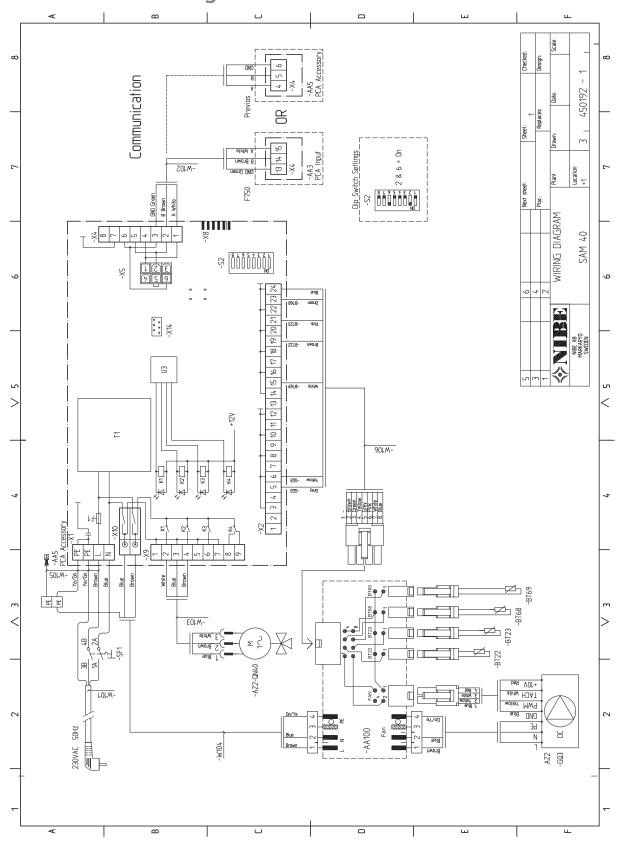
Energy labelling

26

Supplier		NIBE
Model		SAM 40
Specific energy consumption (SEC)	kWh/(m²	Average: -11.0
	year)	Cold: -28.9
		Warm: 0.7
Energy efficiency class		E
Declared typology		RVU, Unidirectional
Type of drive		Variable speed drive
Type of heat recovery system		None
Thermal efficiency of heat recovery		0
Maximum air flow rate	m³/h	290
Electric power input of the fan drive at maximum flow rate	W	108
Sound power level (LWA)	dB	50
Reference flow rate	m ³ /s (m ³ /h)	0.0583 (210)
Reference pressure difference	Pa	78
Specific power input (SPI)	W/m³/h	0.262
Control factor and control typology		Clock control (0.95)
External leakage rates	%	<3
Information about filter warning		See user manual.
Information about supply/exhaust grilles in the facade		See section General ventilation connection on page 16.
Information about pre-/disassembly		See section Recovery on page 4.
		This installer manual can also be accessed at www.nibe.eu.
The annual electricity consumption	kWh/year	312
Annual heating saved, kWh primary energy per year	kWh	Average: 1,874
	prim/year	Cold: 3,667
		Warm: 848

Chapter 9 | Technical data SAM 40

Electrical circuit diagram



SAM 40 Chapter 9 | Technical data

27

10 Item register

Item register

```
Accessories, 23
Adjusting ventilation, 16
Alarm, 21
Assembly, 7
Commissioning and adjusting, 18
   Connecting to heating medium system, 18
   Preparations, 18
   Start-up and inspection, 18
Connecting to heating medium system, 18
Contact information, 6
Delivery and handling, 7
   Removing the covers, 7
Dimensions and pipe connections, 11
Dimensions and setting-out coordinates, 24
Disturbances in comfort, 21
   Alarm, 21
   Manage alarm, 21
   Troubleshooting, 21
Ε
Electrical circuit diagram, 27
Electrical connections, 17
   Connections, 17
   General, 17
Energy labelling, 26
Heating medium side, 12
   Output transfer to the supply air, 13
Important information, 4
   Recovery, 4
   Safety information, 4
Inspection of the installation, 5
Manage alarm, 21
Marking, 4
Output transfer to the supply air, 13
Pipe and ventilation connections, 10
   Adjusting ventilation, 16
   Dimensions and pipe connections, 11
   General pipe connections, 10
   General ventilation connection, 16
   Heating medium side, 12
   Ventilation flow, 16
Pipe connections
   Symbol key, 10
Preparations, 18
Removing the covers, 7
Safety information, 4
   Contact information, 6
   Inspection of the installation, 5
   Marking, 4
   Serial number, 4
   Symbols, 4
```

Serial number, 4

28

```
Start-up and inspection, 18
Setting the ventilation, 19
Symbol key, 10
Symbols, 4

T
Technical data, 24
Dimensions and setting-out coordinates, 24
Electrical circuit diagram, 27
Technical Data, 25
Technical Data, 25
Technical Data, 25
The design of the supply air module, 8
List of components, 9
Transport
Assembly, 7
Troubleshooting, 21

V
Ventilation flow, 16
```

Chapter 10 | Item register SAM 40

NIBE AB Sweden Hannabadsvägen 5 Box 14 SE-285 21 Markaryd info@nibe.se www.nibe.eu

