Air/water heat pump NIBE SPLIT BA-SVM 10-200

The NIBE SPLIT BA-SVM 10-200 is a compact inverter-controlled air/water heat pump. The outdoor module NIBE AMS 10 is connected with refrigerant pipes to the NIBE BA-SVM 10-200 indoor module. The NIBE BA-SVM 10-200 provides optimum savings since the heat pump automatically adjusts to the property's output requirements all year round.

The NIBE SPLIT BA-SVM 10-200 works down to an outdoor temperature of -20°C and supplies up to 58°C in supply line temperature. The effective cooling function allows the heat pump to deliver a comfortable indoor climate even at high outdoor temperatures.

The NIBE BA-SVM 10-200 is equipped with a water heater, circulation pump, immersion heater and a control system to ensure safe operation. The indoor module is easy to install and provides compact system installation.

- Compact heat pump that adapts to your home's requirements.
- High capacity even down to -20°C and well-developed cooling function.
- Simple and easy-to-install indoor module.
- Part of your smart home Control your comfort online using NIBE Uplink.



This is how NIBE SPLIT works Principle of operation



PRINCIPLES OF FUNCTION

The outdoor module NIBE AMS 10 together with the NIBE BA-SVM 10-200 creates a complete heat pump that can produce heating, hot water and cooling (2-pipe and 4-pipe system).

The operating principle of the 2-pipe system is to use the same installation for cooling operation as for heating. The operating principle of the 4-pipe system is to use separate heating and cooling circuits. In the 4-pipe system, a cooling tank is required.

The heat is retrieved from the outdoor air through an outdoor module (AMS 10), where the refrigerant, which circulates in a closed system, transfers the heat from the heat source (outdoor air) to the indoor module (BA-SVM 10-200).

Good to know about NIBE SPLIT

Transport and storage

AMS 10 should be transported and stored vertically.

If the heat pump is to be lifted using lifting straps without packaging, protect as illustrated.

The right-hand side of the heat pump (seen from the front) is heavier.



The BA-SVM indoor unit should be transported and stored vertically in a dry place.

Location

OUTDOOR MODULE AMS 10

Position AMS 10 outdoors secured to a firm surface, preferably concrete foundation with ground stand near walls or wall mounting.

It must be positioned so that the lower edge of the evaporator is at the level of the average local snowdepth, however a minimum of 200 mm. AMS 10 should not be positioned next to noise sensitive walls, for example, next to a bedroom. Also ensure that the location does not inconvenience the neighbours. Care must be exercised so that the heat pump is not scratched during installation.

Large amounts of condensation water, as well as melt water from defrosting, can be produced. Provide good drainage at the installation area and make sure water cannot run out onto paths or the like during periods that ice can form.

The distance between AMS 10 and the house wall must be at least 150 mm. Ensure that the free space above AMS 10 measures at least 1,000 mm. *AMS 10 must not be positioned so that the outdoor air can be recirculated. In addition, AMS 10 must not be positioned in a windy location or where it might be exposed to direct, strong winds. This reduces the power and impairs the efficiency, as well as having a negative impact on the defrosting function.*

For wall installation, ensure that vibrations do not affect the inside of the house. Also ensure that the wall and mounting can take the weight of the heat pump.



INDOOR MODULE BA-SVM 10-200

- It is recommended that BA-SVM 10-200 is installed in a room with existing floor drainage, most suitably in a utility room or boiler room.
- The surface must be firm, preferably a concrete floor or foundation.
- The unit can be aligned using the adjustable feet.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.
- Leave a free space of 800 mm in front of the indoor unit. All servicing of BA-SVM 10-200 can be carried out from the front.

Supplied components

Local differences in the enclosed kit may occur. See relevant installer manual for more information.





Outside sensor

Straps for single phaseconnection

Safety valve

Current sensor, 3-phase

Safety valve with manometer

Energy meter included in BA-SVM 10-200 E EM version only.

Installation

Pipe installation

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

BA-SVM 10-200 can work at a temperature up to 65 °C. For best savings, we recommend that the climate system be dimensioned for max 55 °C.

BA-SVM 10-200 is not equipped with shut-off valves. These must be installed outside the indoor module to facilitate any future servicing.

BA-SVM 10-200 can be connected to the radiator system, floor heating system and/or fan convectors.

Install the supplied safety valve and manometer.

Ensure that incoming water is clean. When using a private well, it may be necessary to supplement with an extra water filter.

OVERFLOW VALVE

A free flow is required for all docking options, which means that an overflow valve must be installed.

For more information see nibe.eu.

CONNECTING REFRIGERANT PIPES (NOT SUPPLIED)

Install the refrigerant pipes between the outdoor module AMS 10 and BA-SVM 10-200.

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

Limitations

- Maximum pipe length, AMS 10 (L): 30m.
- Maximum height difference (H): ±7m.

MINIMUM SYSTEM FLOW

Air/water heat pump	Minimum flow during defrosting (100% pump capacity [l/s])	Minimum recommen- ded pipe dimension (DN)	Minimum recommen- ded pipe dimension (mm)
BA-SVM 10-200/6 + AMS 10-6	0,19	20	22
BA-SVM 10-200/12 + AMS 10-8	0,19	20	22
BA-SVM 10-200/12 + AMS 10-12	0,29	20	22

MINIMUM CLIMATE SYSTEM VOLUMES

AMS 10	6	8	12
Minimum climate system volume during heating/cooling	501	801	1001



Pipe dimensions and materials BA-SVM 10-200/6

	Gas pipe	Liquid pipe	
Pipe dimension	Ø12,7 mm (1/2")	Ø6,35 mm (1/4")	
Connection	Flare - (1/2")	Flare - (1/4")	
Material	Copper quality SS-EN 12735-1 or		
	C1220T, JIS H3300		
Minimum material thickness	1.0 mm	0.8 mm	

BA-SVM 10-200/12

	Gas pipe Liquid pipe		
Pipe dimension	Ø15.88 mm (5/8")	Ø9.52 mm (3/8")	
Connection	Flare – (5/8")	Flare – (3/8")	
Material	Copper quality SS-EN 12735-1 or		
	C1220T, JIS H3300		
Minimum material thickness	1.0 mm	0.8 mm	

INSTALLATION REQUIREMENTS

	AMS 10-6	AMS 10-8	AMS 10-12	
Max pressure, climate system		0,3 MPa (3 Bar)		
Highest recommended supply/return temperature at dimensioned outdoor temperature		55/45 °C		
Max temperature in BA-SVM 10-200		+65 °C		
Max flow line temperature with compressor		+58 °C		
Min supply temperature cooling		+7 °C		
Max supply temperature cooling	+25 °C			
Max pipe length, refrigerant pipe, one way*	30 m	30 m	30 m	
Min volume, climate system during heating, cooling**	201	50	80 I	
Min volume, climate system during under floor cooling**	50 I	801	100 l	
Max flow, climate system	0,29 l/s	0,38 l/s	0,57 l/s	
Min flow, climate system, 100% circulation pump speed (defrosting flow)	0,19 l/s	0,19 l/s	0,29 l/s	
Min flow, heating system	0,09 l/s	0,12 l/s	0,15 l/s	
Min flow, cooling system	0,11 l/s	0,16 l/s	0,20 l/s	
Docking external addition	BA-SVM 10-200			
Output external addition	15 kW			
Recommended docking flow	0,17-0,22 l/s			
Max temperature from external heat source	+65 °C			

* AMS 10-6: If the length of the refrigerant pipes exceeds 15 m, extra refrigerant must be added at a rate of 0.02 kg/m.

AMS 10-8/12: If the length of the refrigerant pipes exceeds 15 metres, extra refrigerant must be added at a rate of 0.06 kg/m

** Regards circulating volume

External circulation pump must be used when the pressure drop in the system is greater than the available external pressure. In such cases, a bypass line with non-return valve must be installed.

Overflow valve must be used if min. system flow cannot be guaranteed.

Electrical connections

BA-SVM 10-200 must be installed via a circuit breaker with a minimum breaking gap of 3 mm.

All electrical equipment, except the outdoor temperature sensor, room sensor and current sensors are already connected at the factory.

- Disconnect the power supply of the indoor unit before insulation testing the building wiring.
- If the house is equipped with a residual-current device, BA-SVM 10-200 should be equipped with a separate residual current breaker.
- For the indoor unit wiring diagram, see technical data "Electrical wiring diagram".
- Communication and sensor cables must not be laid close to high-voltage cables.
- The power supply cable should be dimensioned according to the current standards.
- To route the cables to BA-SVM 10-200, use cable grommet. In cable grommet, the cables are routed through the entire indoor unit from the back to the front.

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.

The switch must not be moved to "I" until the unit has been filled with water. The circulation pump and immersion heater may be damaged.

PRINCIPLE DIAGRAM, ELECTRICAL INSTALLATION



* Only in a 3-phase installation.

Functions

NIBE SPLIT BA-SVM 10-200 is a system that can produce heating, hot water and cooling.

The principle during heating can be simplified as follows:

- 1. The refrigerant in AMS 10 retrieves heat from the outdoor air then compresses it, which increases the temperature further.
- 2. The hot refrigerant (now in gas state) is routed into BA-SVM 10-200.
- 3. The refrigerant releases the heat for further distribution in the system.
- 4. The refrigerant (now in liquid state) is routed back to AMS 10 and the process is repeated.

By reversing the process, thereby allowing the refrigerant in AMS 10 to retrieve the heat from the water and release it into the outdoor air, the heat pump can, if necessary, cool instead.

BA-SVM 10-200 determines when AMS 10 is to work and not to work, using the collated data from the temperature sensor. In the event of extra heat demands,

BA-SVM 10-200 can connect additional heat in the form of the immersion heater, or any connected external addition



The indoor temperature depends on several different factors. Sunlight and heat emissions from people and household machines are normally sufficient to keep

the house warm during the warm seasons. When it gets colder outside, the climate system needs to help heat the house. The colder it is outside, the warmer radiators and underfloor heating systems have to be.

Control of the heat production is performed based on the "floating condensing" principle, which means that the temperature level needed for heating at a specific outdoor temperature is produced based on collected values from the outdoor and supply temperature sensors. The room sensor can also be used to compensate the deviation in room temperature.

Heat production

The supply of heat to the house is regulated in accordance with the heating curve setting selected. After adjustment, the correct amount of heat for the current outdoor temperature is supplied. The supply temperature of the heat pump will oscillate around the theoretically required value.

OWN CURVE

BA-SVM 10-200 has pre-programmed non-linear heating curves. It is also possible to create your own defined curve. This is an individual linear curve with a number of break points. You select break points and the associated temperatures.

Cooling production



BA-SVM 10-200 can be used to cool the house during hot periods of the year.

The climate system must manage cooling operation. Settings must be made by the installer when commissioning the system.

Hot water production



Hot water charging starts when the temperature has fallen to the set start temperature. Hot water charging stops when the hot water temperature at the hot water sensor has been

reached. For temporary higher hot water demand, there is a

function that allows the temperature to be raised temporarily for up to 12 hours or by a one time increase (can be selected in the menu system).

With the Smart Control function activated, BA-SVM 10-200 learns how much hot water is used and when. The Smart Control function memorises the previous week's hot water consumption and adapts the hot

water temperature for the coming week to ensure minimal energy consumption.

It is also possible to set BA-SVM 10-200 in holiday mode, which means that the lowest possible temperature is achieved without the risk of freezing.

Additional heat only

BA-SVM 10-200 can be used with additional heat only (electric boiler) to produce heating and hot water, for example before the outdoor module is installed.

Alarm indications

The status lamp lights red in the event of an alarm and the display shows detailed information depending on the fault. An alarm log is created with each alarm containing a number of temperatures, times and operating status.

The display

BA-SVM 10-200 is controlled using a clear and easy to use display. Instructions, settings and operational information are shown on the display. You can easily navigate between the different menus and options to set the comfort or obtain the information you require.

The display unit is equipped with a USB socket that can be used to update the software and save logged information in BA-SVM 10-200.

Visit nibeuplink.com and click the "Software" tab to download the latest SMO 40 software for your installation.

NIBE Uplink



Using the Internet and NIBE Uplink, you can obtain a quick overview and the present status of the installation and the heating in

your home. You can obtain a good overall view, allowing you to monitor and control the heating and hot water comfort effectively. If the system is affected by a malfunction, you receive an alert via e-mail that allows you to react quickly.

NIBE Uplink also gives you the opportunity to control the comfort in your home easily, no matter where you are.

BANGE OF SERVICES

You have access to different levels of service via NIBE Uplink. A basic level that is free and a premium level

where you can select different extended service functions for a fixed annual subscription fee (the subscription fee varies depending on the selected functions).

NIBE Uplink also available as an app from App Store and Google Play.

INSTALLATION AND ASSOCIATED EQUIPMENT REQUIREMENTS

NIBE Uplink needs the following in order to communicate with your BA-SVM 10-200:

- network cable
- Internet connection to which BA-SVM 10-200 can be connected
- web browser with JavaScript activated
- account on nibeuplink.com

We recommend our mobile app for NIBE Uplink.

For more information, visit nibeuplink.com.

NIBE SMART PRICE ADAPTION™



Smart Price Adaption adjusts the heat pump's consumption according to the time of day

that electricity prices are lowest. This allows for savings, provided that the hourly rate subscription has been signed with the electricity supplier.

The function is based on hourly rates for the coming day being downloaded via NIBE Uplink. To use the function, an Internet connection and account on NIBE Uplink are necessary.

SMART HOME



When you have a smart home system that can communicate with NIBE Uplink, you can control the installation via an app by activating the "smart home" function.

By allowing connected units to communicate with NIBE Uplink, your heating system becomes a natural part of your homesmart home and gives you the opportunity to optimise the operation.

Remember that the "smart home" function requires-NIBE Uplink in order to work.

NIBE SMART ENERGY SOURCE™

Smart Energy Source[™] prioritises how / to what extent each docked energy source will be used. Here you can choose if the system is to use the energy source that is cheapest at the time. You can also choose if the system is to use the energy source that is most carbon neutral at the time.

Technical data

Dimensions and setting-out coordinates





OUTDOOR MODULE AMS 10-6



OUTDOOR MODULE AMS 10-8



OUTDOOR MODULE AMS 10-12

110

 -C

27 50

52









Sound levels

AMS 10 is usually placed next to a house wall, which gives a directed sound distribution that should be considered. Accordingly, you should always attempt to find a placement on the side that faces the least sound sensitive neighbouring area.

The sound pressure levels are further affected by walls, bricks, differences in ground level, etc and should therefore only be seen as guide values.



Noise		AMS 10-6	AMS 10-8	AMS 10-12
Sound power level, according to EN12102 at 7/35 °C (nominal)*	LW _w (A)	51	55	58
Sound pressure level at 2 m free standing (nominal)*	dB(A)	37	41	44

* Free space.

Technical data

Unit	BA-SVM 10-200/6/E/EM/R	BA-SVM 10-200/12/E/EM/R	
mm	1590		
mm	2100		
mm	60	00	
mm	6	10	
ka	161	165	
ĸġ	(124 - ONLY BA-SVM 10-200/6 R)	(128 - ONLY BA-SVM 10-200/12 R)	
bar	:	3	
bar	1	0	
I	18	30	
°C	6	5	
°C	6	5	
-	Yes		
-	Yes, in the safety assembly		
I	1	0	
kW	4.5 (230V)) / 9 (400V)	
V	1×230	/ 3×400	
-	Enamel + titanium anode (E	, E EM) / Stainless Steel (R)	
-	230 litre	es. 40°C	
-	A++		
-	A/XL		
	Unit mm mm mm mm mm kg bar bar l °C °C °C l kW V -	Unit BA-SVM 10-200/6/E/EM/R mm 15 mm 21 mm 21 mm 21 mm 21 mm 21 mm 61 kg 161 (124 - ONLY BA-SVM 10-200/6 R) bar 1 l 1 oC 66 °C 70 - Yes, in the sa l 1 kW 4.5 (230V) V 1x230 - 230 litre - 230 litre - A/	

Outdoor module	Unit	AMS 10-6	AMS 10-8	AMS 10-12	
Starting current	A	5			
Compressor	-	Twin Rotary			
Max. nominal fan performance (heating)	m³/h	2 530	3 000	4 380	
Fan power	W	50	8	6	
Defrosting	-		Reverse cycle		
Hot water tank drip tray	W	Integrated 110	Integrated 100	Integrated 120	
High pressure critical value	MPa (bar)		4.15 (41.5)		
Low pressure switch-off value (15 s)	MPa (bar)	0.079 MPa (0.79)			
Height	mm	640	750	845	
Width	mm	800	780 (+ 67 valve cover)	970	
Depth	mm	290 (+62 base rail)	340 (+80 base rail)	370 (+80 base rail)	
Weight	kg	46	60	74	
Colour (two layers of powder coating)	-		Dark grey		
Refrigerant amount	kg	1.5	2.55	2.90	
Max. length of refrigerant pipe one-way	m		30*		
Refrigerant nine dimensions		Gas pipe: ext. diame- ter 12.7 (1/2")	Ie- Gas pipe: ext. diameter 15.88 (5/8")		
	-	Liquid line: ext. diame- ter 6.35 (1/4")	Liquid line: ext. diameter 9.53 (3/8")		
Optional pipe connections	-	Right-hand side		Bottom / right-hand side/ back	
Part no.	-	064 205	064 033	064 110	

* AMS 10-6: If the length of the refrigerant pipes exceeds 15 m, extra refrigerant must be added at a rate of 0.02 kg/m.

AMS 10-8/12: If the length of the refrigerant pipes exceeds 15 metres, extra refrigerant must be added at a rate of 0.06 kg/m

PERFORMANCE

Outdoor module / indoor unit		AMS10-6/	AMS 10-8	AMS 10-12
		BA-SVM 10-200/6	BA-SVM 10-200/12	BA-SVM 10-200/12
Output data according to EN14511 ΔT5K	Outdoor temp. /			
	Supply temp.			
Heating	7/35 °C (floor)	2.67/0.5/5.32	3.86/0.83/4.65	5.21/1.09/4.78
	2/35 °C (floor)	2.32/0.55/4.2	5.11/1.36/3.76	6.91/1.79/3.86
Capacity / power input / COP (kW/kW/-)	-7/35 °C (floor)	4.60/1.79/2.57	6.60/2.46/2.68	9.00/3.27/2.75
at nominal flow	7/45 °C	2.28/0.63/3.62	3.70/1.00/3.70	5.00/1.31/3.82
	2/45 °C	1.93/0.67/2.88	5.03/1.70/2.96	6.80/2.24/3.04
Cooling	27/7 °C	5.87/1.65/3.56	7.52/2.37/3.17	9.87/3.16/3.13
	27/18 °C	7.98/1.77/4.52	11.20/3.20/3.50	11.70/3.32/3.52
Capacity / Power input / EER (kW/kW/-)	35/7 °C	4.86/1.86/2.61	7.10/2.65/2.68	9.45/3.41/2.77
at maximum flow	35/18 °C	7.03/2.03/3.45	9.19/2.98/3.08	11.20/3.58/3.12

SCOP & PDESIGNH

SCOP & P_{designh} AMS10 according to EN14825

designh inverte according to Environce						
Outdoor module / indoor unit	AMS10-6/		AMS 10-8		AMS 10-12	
	BA-SVN	1 10-200/6	BA-SVM	10-200/12	BA-SVM 10-200/12	
	P _{designh}	SCOP	P _{designh}	SCOP	P _{designh}	SCOP
SCOP 35 Average climate	4.8	4.8	8.2	4.38	11.5	4.43
SCOP 55 Average climate	5.3	3.46	7.0	3.25	10	3.38
SCOP 35 Cold climate	4.0	3.65	9	3.55	11.5	3.63
SCOP 55 Cold climate	5.6	2.97	10	2.78	13	2.85
SCOP 35 Warm climate	4.2	6.45	8	5.7	12	5.8
SCOP 55 Warm climate	4.76	4.58	8	4.58	12	4.7

Energy rating, average climate

Model	Unit	AMS 10-6	AMS 10-8	AMS 10-12
Model hot water heater, E / EM / R		BA-SVM 10-200/6	BA-SVM 10-200/12	BA-SVM 10-200/12
Temperature application	°C	35 / 55	35 / 55	35 / 55
Energy efficiency class for space heating		A+++ / A++	A++ / A++	A++ / A++
Space heating efficiency class of the system ¹⁾		A+++ / A++	A+++ / A++	A+++ / A++
Water heating energy efficiency class		A	А	А
Declared load profile for water heating		XL	XL	XL

1) Reported efficiency for the system also takes the temperature regulator into account. If the system is supplemented with an external additional boiler or solar heating the total efficiency of the system must be recalculated.

Accessories

Not all accessories are available on all markets. Detailed information about the accessories and complete accessories list available at nibe.eu.

ACCESSORY CARD AXC 30

An accessory board for active cooling (4-pipe system), extra climate system, hot water comfort or if more than two charge pumps are to be connected to BA-SVM 10-200. It can also be used for step-controlled additional heat (e.g. external electric boiler), shunt-controlled additional heat (e.g. wood/oil/gas/pellet boiler).



An accessory board is required if for example an HWC pump is to be connected to BA-SVM 10-200 at the same time that the common alarm indication is activated.

Part no. 067 304

AUXILIARY RELAY HR 10

Auxiliary relay HR 10 is used to control external 1 to 3 phase loads such as oil burners, immersion heaters and pumps.

Part no. 067 309

HRV UNIT ERS

This accessory is used to supply the accommodation with energy that has been recovered from the ventilation air. The unit ventilates the house and heats the supply air as necessary.

Part no. 066 167

COMMUNICATION MODULE FOR SOLAR ELECTRICITY EME 20

EME 20 is used to enable communication and control between inverters for solar cells from NIBE and BA-SVM 10-200.



Part no. 057 188

COMMUNICATION MODULE MODBUS 40



MODBUS 40 enables BA-SVM 10-200 to be controlled and monitored using a DUC (computer sub-centre) in the building.

Part no. 067 144

CONDENSATION WATER PIPE

Condensation water pipe, different lengths. Earth circuit breaker 1-phase.



1 meter	3 meter	6
Art nr 067 614	Art nr 067 616	Art ni

6 meter Art nr 067 618

EXTRA SHUNT GROUP ECS 40/ ECS 41

This accessory is used when BA-SVM 10-200 is installed in houses with two or more different heating systems that require different supply temperatures.



ECS 40 (Max 80 m²) Art nr 067 287 ECS 41 (ca 80-250 m²) Art nr 067 288

ROOM SENSOR RTS 40

This accessory is used to obtain a more even indoor temperture.



Part no. 067 065

ROOM UNIT RMU 40

RMU 40 means that control and monitoring of the heat pump can be carried out in a different part of your home to where it is located.





20 NIBE SPLIT BA-SVM 10-200

IT'S IN OUR NATURE

IT'S IN OUR NATURE

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