IHB EN 1911-1
531217

INSTALLER MANUAL

Accumulator tank
AHP S/ AHPS S/ AHPH S

Table of Contents

1 Important information

Safety information

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

The manual must be left with the customer.

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.

SYMBOLS

NOTE

This symbol indicates danger to person or machine .

Caution

This symbol indicates important information about what you should consider when installing or servicing the installation.

TIP

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

MARKING

CE The CE mark is obligatory for most products sold in the EU, regardless of where they are made.

General

AHP S/ AHPS S/ AHPH S is designed and manufactured according to good technical practice[1] in order to ensure safe usage.

[1] Pressure Equipment Directive 2014/68/EU Article 4 point 3.

SERIAL NUMBER

The serial number can be found at the bottom right of the front cover.

Caution

Always give the product's serial number when reporting a fault.

RECOVERY

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

Do not dispose of used products with normal household waste. It must be disposed of at a special waste station or dealer who provides this type of service.

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

INSPECTION OF THE INSTALLATION

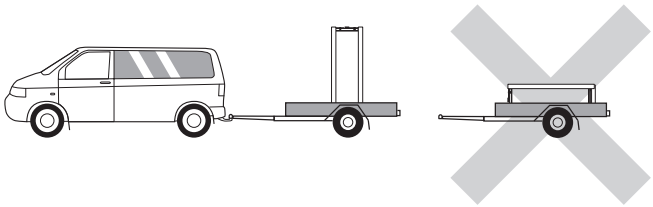
Current regulations require the heating installation to be inspected before it is commissioned. The inspection must be carried out by a suitably qualified person.

✔	*Description*	*Notes*	*Signature*	*Date*
Heat pump (page 16)				
	Shut off valves			
	Expansion vessel			
	Safety valve			
Hot water (page 15)				
	Shut off valves			
	Mixing valve			
	Safety valve			
Cold water (page 15)				
	Shut off valves			
	Non-return valve			
Electricity (page 17)				
	Sensors			

2 Delivery and handling

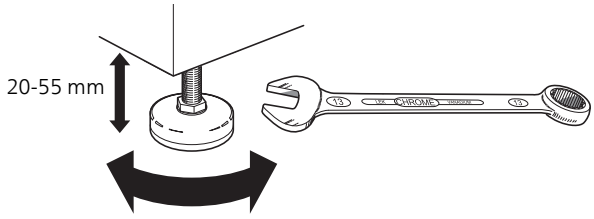
Transport

AHP S/ AHPS S/ AHPH S should be transported and stored vertically in a dry place. However, the AHP S/ AHPS S/ AHPH S may be carefully laid on its back when being moved into a building.



Assembly

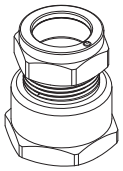
- The accumulator tank may only be installed vertically.
- The area where the AHP S/ AHPS S/ AHPH S is located must be frost-proof and equipped with a floor drain.
- Position AHP S/ AHPS S/ AHPH S on a firm base that can take the weight, preferably on a concrete floor or foundation. Use the accumulator tank's adjustable feet to obtain a horizontal and stable set-up.



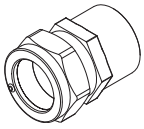
Supplied components

AHPS S300

3x plug Ø 22



2x straight connection Ø 22xG1



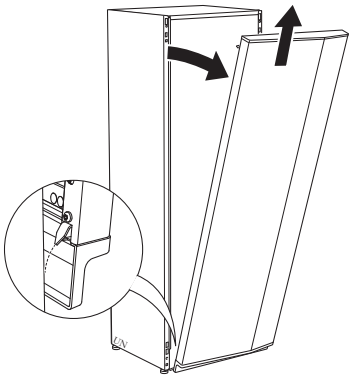
1x straight connection Ø 22xG¾

LOCATION

The kit of supplied items is placed on top of the product.

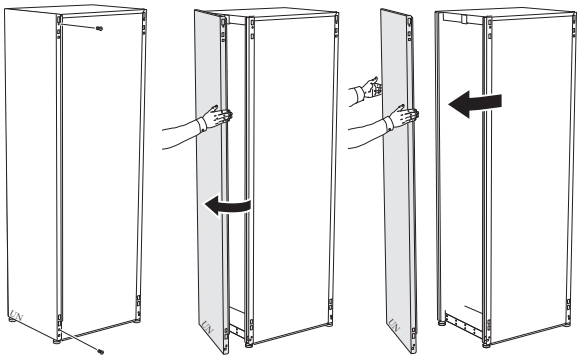
Removing the covers

FRONT COVER



1. Disconnect the front cover at the top edge and pull it straight out.
2. Lift the front cover upwards.

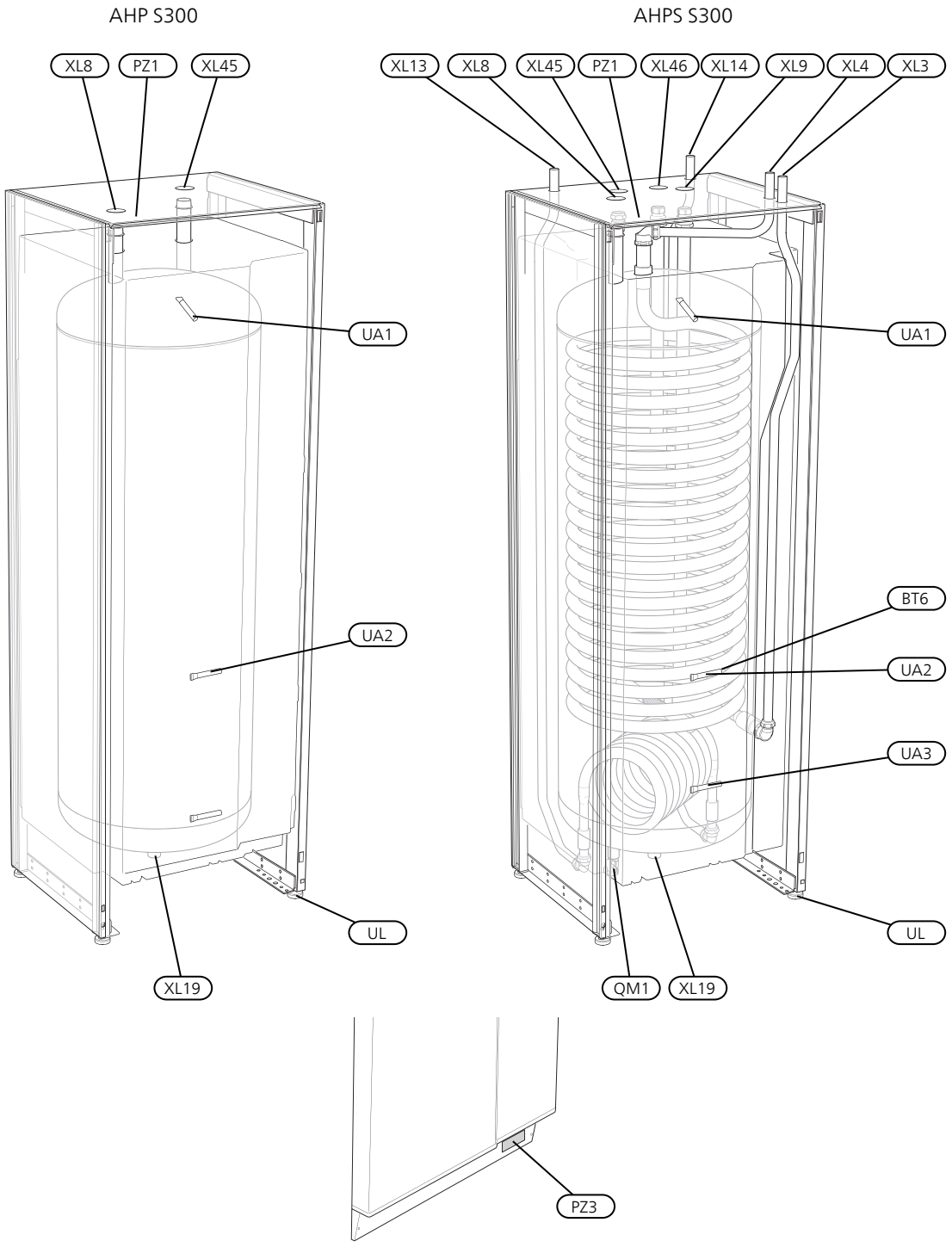
SIDE COVERS



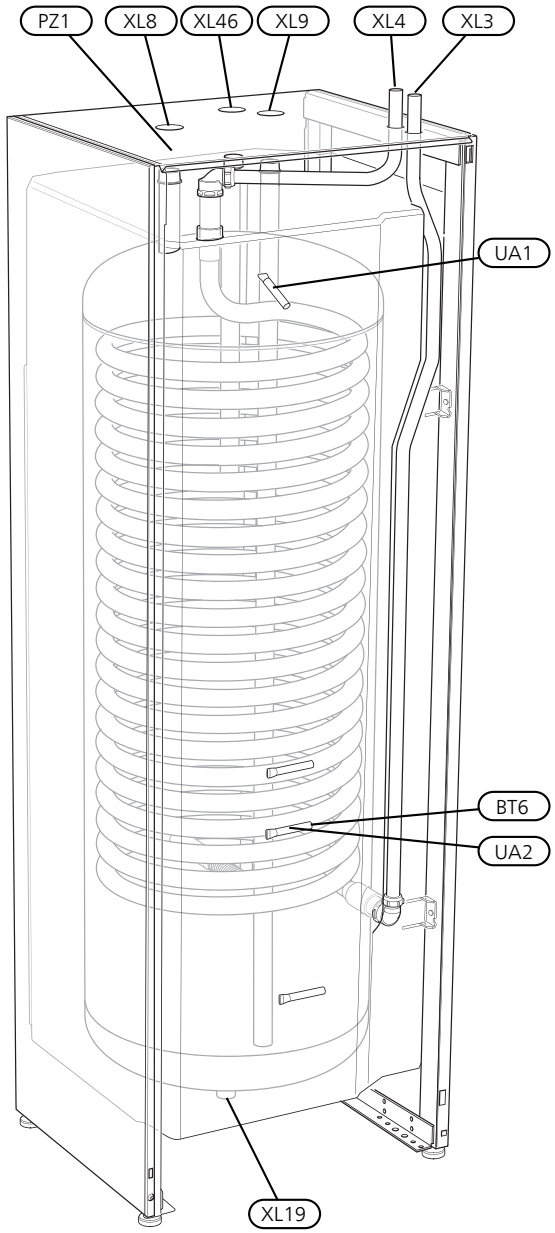
The side covers can be removed to facilitate the installation.

1. Remove the screws from the upper and lower edges.
2. Twist the cover slightly outward.
3. Move the hatch backwards and slightly to the side.
4. Pull the cover to one side.
5. Pull the hatch forwards.

3 Accumulator tank design



AHPH S300



Pipe connections

XL3	Connection, cold water
XL4	Connection, hot water
XL8	Docking connection, supply line (from heat pump*)
XL9	Docking connection, return line (to heat pump*)
XL13	Connection, supply line (from solar heating system)
XL14	Connection, return line (to solar heating system)
XL19	Docking connection, return line high temperature (to external heat source)
XL45	Docking connection, level 1
XL46	Docking connection, level 2

HVAC components

QM1	Drain valve, heating medium
UA1	Submerged tube for hot water sensor (BT7) (display)
UA2	Submerged tube for hot water sensor (BT6) (control)
UA3	Submerged tube for solar sensor (control)

Electrical components

BT6	Hot water sensor (control)

Miscellaneous

PZ1	Rating plate
PZ3	Serial number plate
UL	Adjustable feet

*or another external heat source

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

4 Pipe connections

General

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

The accumulator tank must be fitted with the requisite valves, such as a safety valve, shut-off valve and non-return valve. An overflow pipe should be routed from the safety valve to an appropriate drain. The overflow pipe must be the same size as the safety valve. Route the overflow pipe from the safety valve, sloping along its entire length, and ensure that it is frost-proof and well supported. The mouth of the overflow pipe must be visible and not placed close to electrical components.

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

If uncertain, contact a plumber alternatively see applicable standards.

MAXIMUM BOILER AND RADIATOR VOLUMES

For installation in pressurised systems, the system must be equipped with a pressure expansion vessel pre-pressurised to 0.5 bar .

Internal volume in AHP S/ AHPS S/ AHPH S for calculating expansion vessel is 270 l. The expansion vessel's volume must be at least 10% of the system's total volume.

Example table:

Total volume (l) (accumulator tank and radiator system)	*Volume (l) expansion vessel*
500	50
700	70
1000	100

Caution

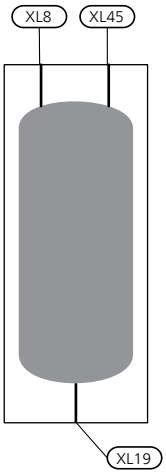
Expansion vessel not supplied with the product.

The pre-pressure of the pressure expansion vessel must be dimensioned according to the maximum height (H) between the vessel and the highest positioned radiator. A pre-pressure of 0.5 bar means a maximum permitted height difference of 5 m.

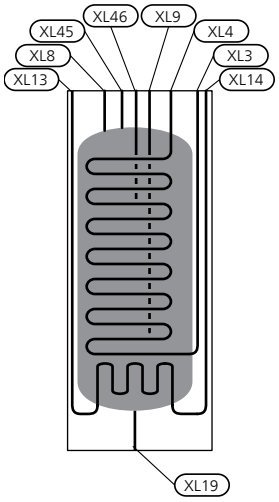
If the pre-pressure in the pressure vessel is not high enough, it can be increased by adding air via the valve in the expansion vessel. The expansion vessel's pre-pressure must be entered in the check list on page 6. Any change in the pre-pressure affects the ability of the expansion vessel to handle the expansion of the water.

System diagram

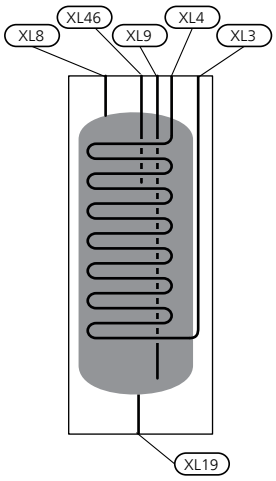
AHP S300



AHPS S300



AHPH S300



AHP S300

AHP S300 consists of a vessel with accumulated volume. AHP S300 is connected to AHPS S300 / AHPH S300.

AHPS S300

AHPS S300 consists of a vessel with a number of connections, which makes it possible to dock the accumulator tank to external units. By using the different levels in the tank, heat can be extracted and supplied to the tank in several different ways. For example, you can use the volume between the bottom and the middle level to extract solar heat to heat a pool. The heat between level 2 and the top of the tank is then intended to preheat the hot water for the heat pump.

AHPH S300

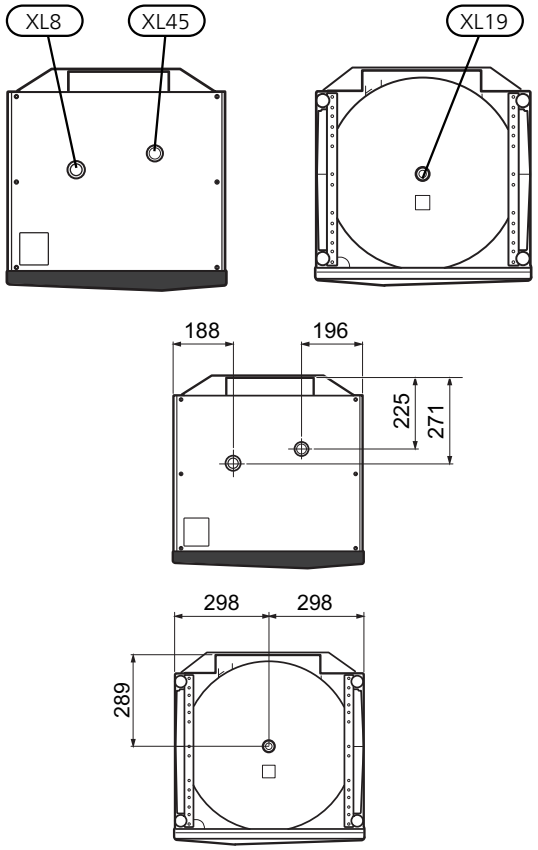
AHPH S300 consists of an accumulator tank with integrated tap coil for hot water. AHPH S300 can be docked to an external heat source, for example heat pump.

XL3	Connection, cold water
XL4	Connection, hot water
XL8	Docking connection, supply line (from heat pump*)
XL9	Docking connection, return line (to heat pump*)
XL13	Solar heat connection, supply line (from solar heating system)
XL14	Solar heat connection, return line (to solar heating system)
XL19	Docking connection, return line (to heat source)
XL45	Docking connection, top of the tank
XL46	Docking connection, middle of the tank

*or another external heat source

Dimensions and pipe connections

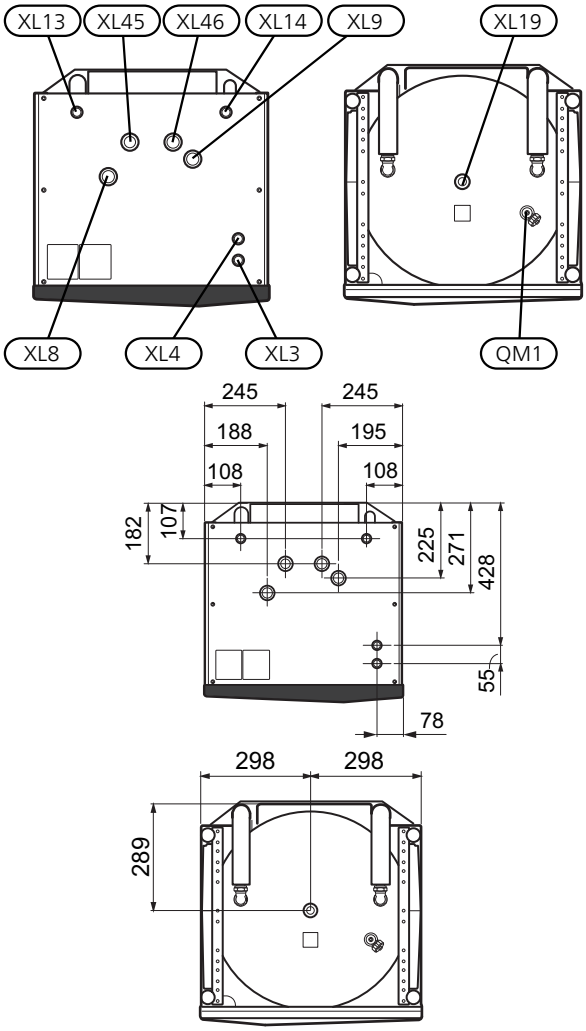
AHP S300



Connection AHP S300		
XL8Docking connection, supply line (from heat pump*)	G25	ext.
XL19Docking connection, return line high temperature	G25	ext.
XL45Docking connection, level 1	G25	ext.

*or another external heat source

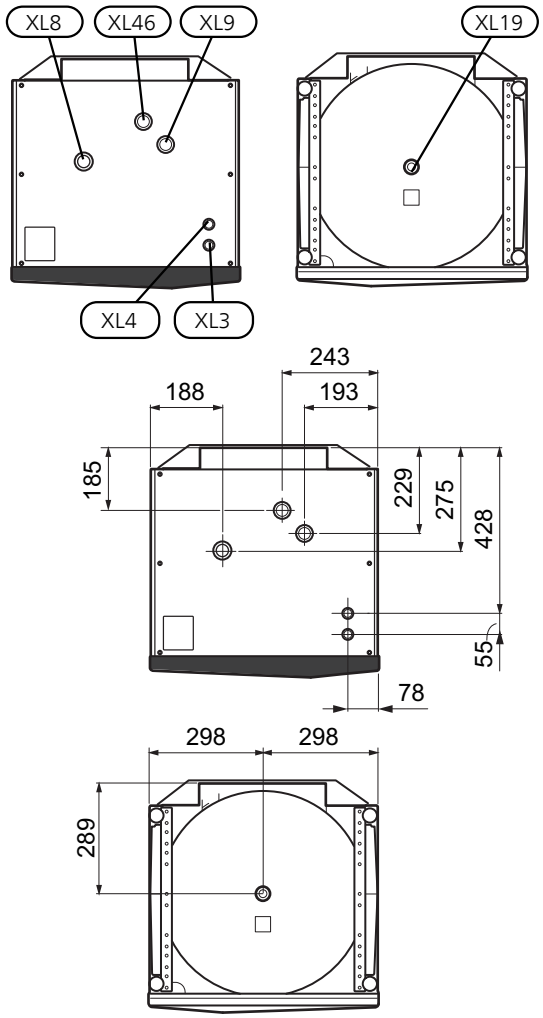
AHPS S300



Connection AHPS S300		
QM1Tapping valve	G20	ext.
XL3Cold water Ø	mm	22
XL4Hot water Ø	mm	22
XL8Docking connection, supply line (from heat pump*)	G25	ext.
XL9Docking connection, return line (to heat pump*)	G25	ext.
XL13Solar supply line Ø	mm	22
XL14Solar return line	mm	22
XL19Docking connection, return line high temperature	G25	ext.
XL45Docking connection, level 1	mm	22
XL46Docking connection, level 2	mm	22

*or another external heat source

AHPH S300



Connection AHPH S300		
XL3Cold water Ø	mm	22
XL4Hot water Ø	mm	22
XL8Docking connection, supply line (from heat pump*)	G25	ext.
XL9Docking connection, return line (to heat pump*)	G25	ext.
XL19Docking connection, return line high temperature	G25	ext.
XL46Docking connection, level 2	G25	ext.

*or another external heat source

Installation alternative

> *NOTE*
>
> This is the outline diagram. Actual installations must be planned according to applicable standards.

AHP S/ AHPS S/ AHPH S can be connected in several different ways, some of which are shown here.

Further option information is available at nibe.eu and in the respective assembly instructions for the heat sources used.

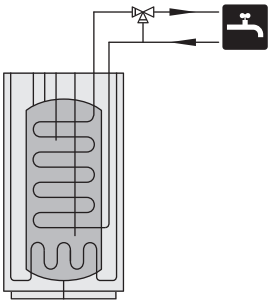
SYMBOL KEY

Symbol	*Meaning*
	Venting valve
	Shut-off valve
	Mixing valve
	Circulation pump
	Expansion vessel
	Pressure gauge
	Level vessel
	Control valve
	Particle filter
	Safety valve
	Temperature sensor
	Thermometer
	Sun
	Heat pump
	Radiator system
	Domestic hot water

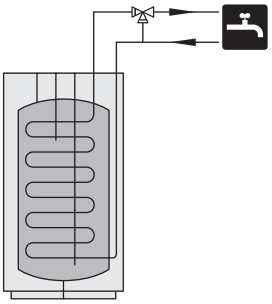
CONNECTING COLD AND HOT WATER TO THE HEAT PUMP

There must be a mixer valve if the temperature can exceed 60 °C.

AHPS S300

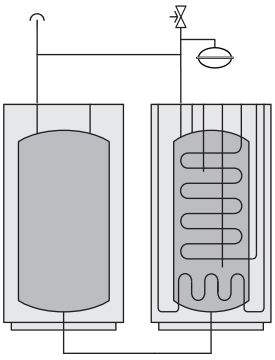


AHPH S300



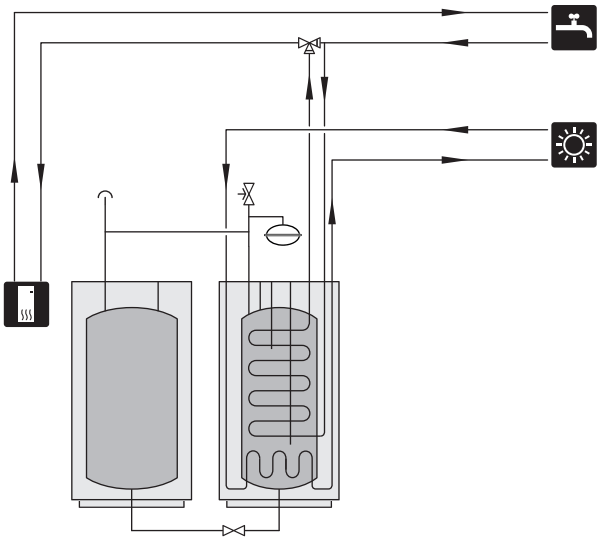
CONNECTING TWO TANKS

Extended volume for connecting several solar panels, for example.



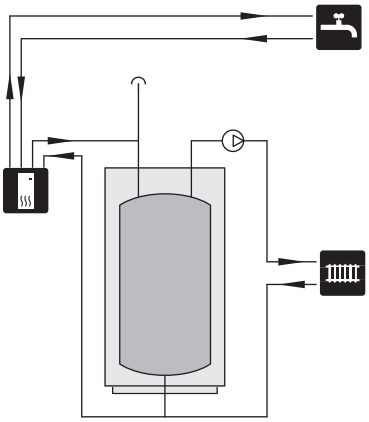
TO SOLAR HEATING

AHPS S300 can be docked to solar heating system.



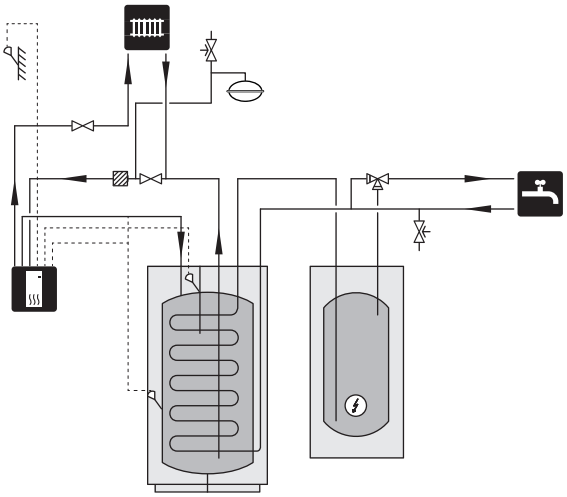
AS A BUFFER VESSEL FOR HEATING SYSTEM

AHP S300 can be docked as a buffer vessel for the heating system, when the system volume is not sufficient, or to reduce heat spikes.



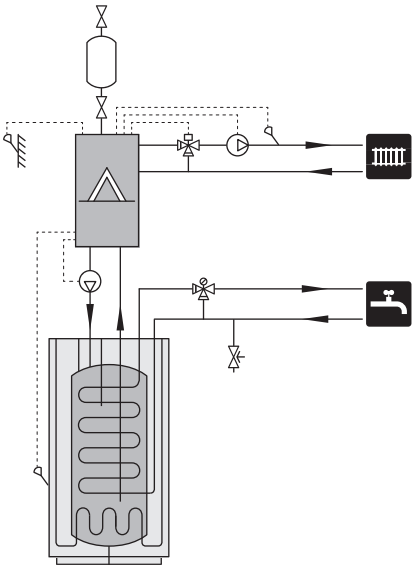
TO GROUND SOURCE HEAT PUMP/EXTERNAL HEAT SOURCE

AHPH S300 can be docked with another heat source, for example NIBE F1145/1155.



TO PELLET BOILER

AHPS S300 and AHPH S300 can be docked with another heat source, a pellet boiler for example.



5 Electrical installation

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.

Sensors

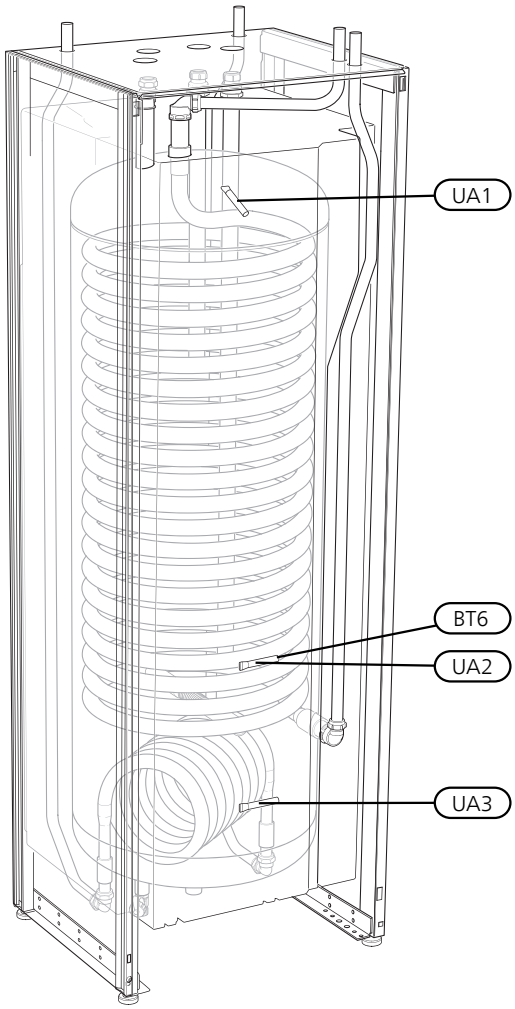
AHP S/ AHPS S/ AHPH S can be supplemented with up to two hot water sensors. These are placed in the submerged tube for hot water sensor (UA1) and (UA2).

AHPS S300 and AHPH S300 has sensor BT6 fitted in submerged tube UA2 at the factory.

AHPS S300 can also be supplemented with a solar sensor. This is placed in the submerged tube for solar sensor (UA3).

Use the sensors provided with the heat pump (or other heat source). When no heat sensors have been provided these must be ordered from the manufacturer of the heat source.

The figure shows AHPS S300.



6 Commissioning and adjusting

Filling and venting

FILLING THE HOT WATER COIL (AHPS S300/AHPH S300)

1. Open a hot water tap in the house.
2. Fill the hot water coil through the cold water connection (XL3).
3. When the water that comes out of the hot water tap it is no longer mixed with air, the hot water coil is full and the tap can be closed.

FILLING THE SOLAR COIL (AHPS S300)

Fill the solar coil through the filling connection in the solar panel unit.

There must be water in the solar coil and the vessel before the solar panel unit is operated.

FILLING THE VESSEL

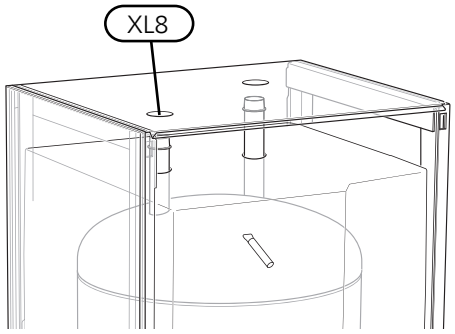
1. Open the externally mounted vent valve (CP2-QM60).
2. Fill the vessel in AHPS S300 through the drain valve (QM1).
3. When the water exiting the vent valve (CP2-QM60) is not mixed with air, the vessel is full.
4. Close the vent valve (CP2-QM60).
5. AHP S300 filled indirectly when AHPS S300 is filled.
6. AHPH S300 is filled through connection XL9, when water runs out of the XL8 connection, the reservoir is full.

VENTING

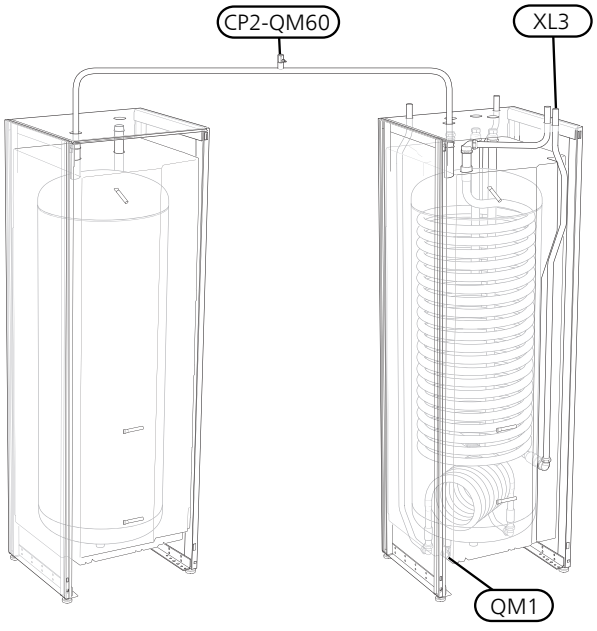
For installations with several AHP S/ AHPS S/ AHPH S it is important to vent the connection between the tanks.

1. Vent through the externally mounted vent valve (CP2-QM 60) .
2. Keep topping up and venting until all air has been removed and the pressure is correct.

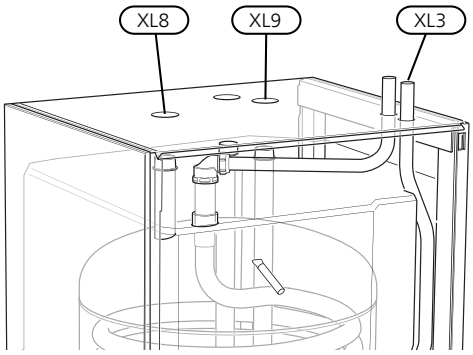
AHP S300



AHPS S300



AHPH S300



7 Service

Service actions

SAFETY VALVE

The hot water coil's externally mounted safety valve sometimes releases a little water after hot water usage. This is because the cold water, which enters the hot water coil, expands when heated causing the pressure to rise and the safety valve to open.

The function of the safety valve must be checked regularly. Perform checks as follows:

1. Open the valve.
2. Check that water flows through the valve.
3. Close the valve.

TIP

The safety valve is not supplied with the accumulator tank. Contact your installer if you are unsure how one checks the valve.

EMPTYING

AHP S300 and AHPH S300: The vessel is drained via docking connection (XL19).

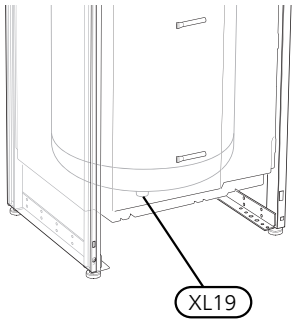
AHPS S300: Empty the vessel via the drain valve (QM1).

AHP S300 and AHPS S300: The vessel is drained via the drain valve (QM1) in AHPS S300, in those cases AHP S300 and AHPS S300 are connected.

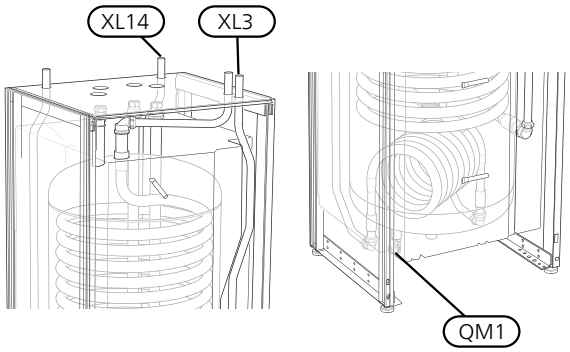
The hot water coil in AHPS S300 and AHPH S300 is emptied through the siphon (with hose) in the cold water connection (XL3).

Drain the solar coil in AHPS S300 through the siphon (with hose) on the connection, return to solar heating system (XL14).

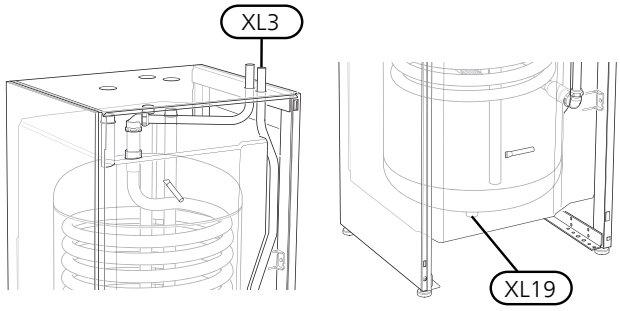
AHP S300



AHPS S300



AHPH S300

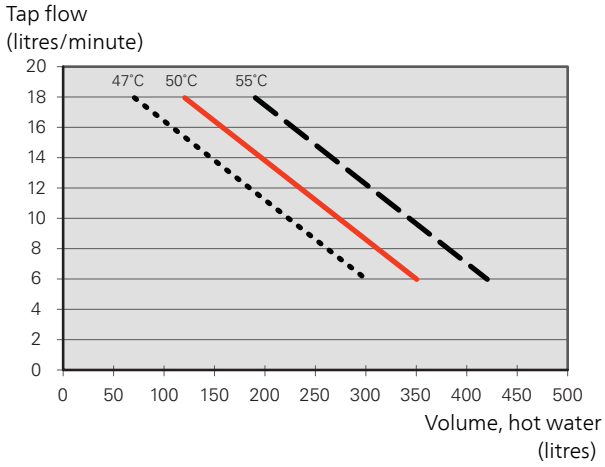


8 Technical data

Diagram

HOT WATER CAPACITY

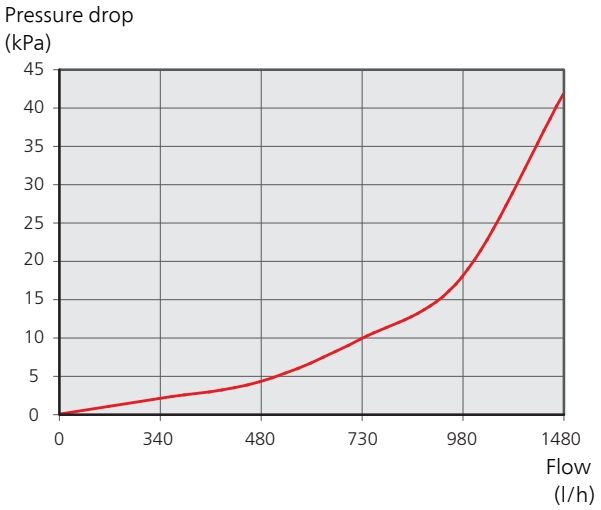
AHPS S300 / AHPH S300



> *NOTE*
>
> To achieve the stop temperatures in the diagram above, the "target temp" charge method must be selected in the heat pump's control system.

PRESSURE DROP DIAGRAM, SOLAR COIL

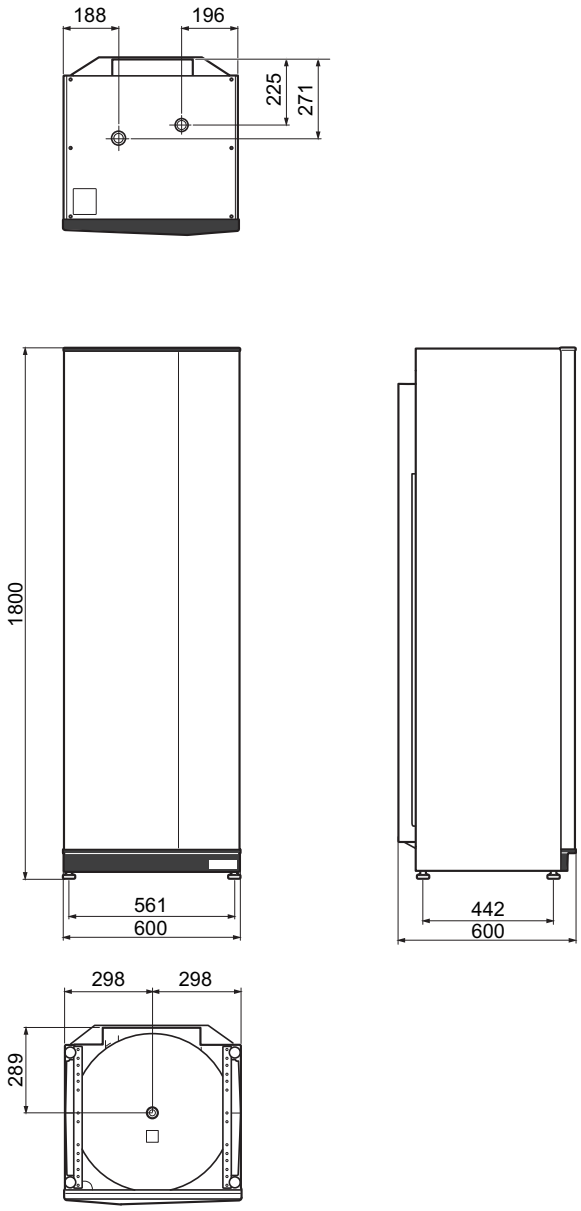
AHPS S300



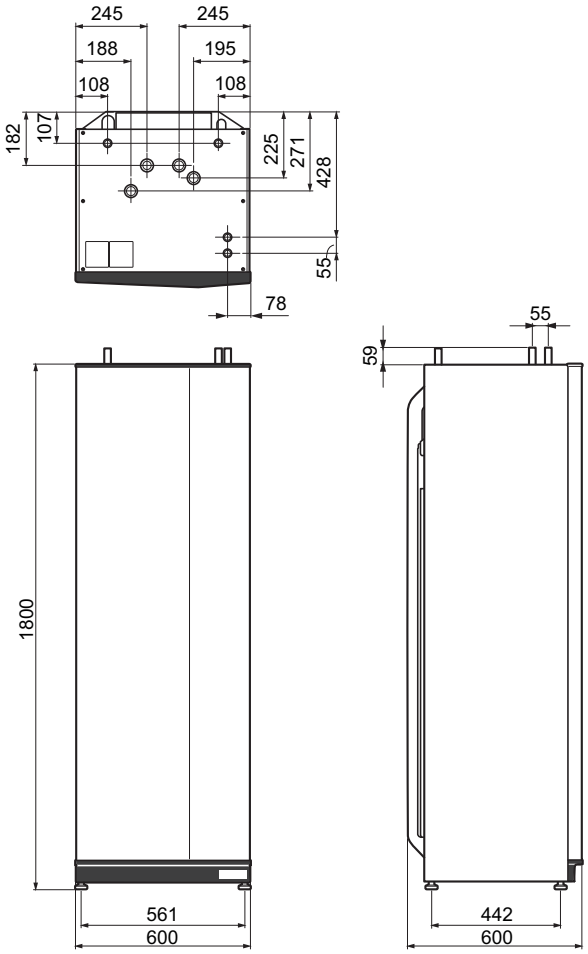
Connection, supply line solar heating system (XL13) and connection, return line solar heating system (XL14).

Dimensions and setting-out coordinates

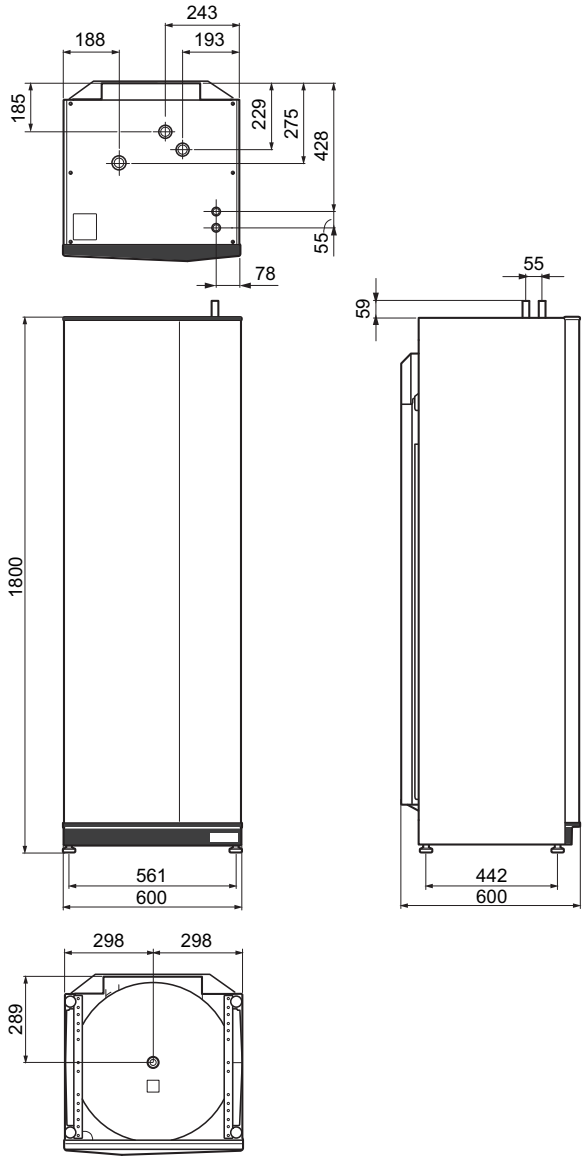
AHP S300



AHPS S300



AHPH S300


243
188
193
185
229
275
428
55
78
55
59
1800
561
600
442
600
298
298
289

Technical specifications

Model		*AHP S300*	*AHPS S300*	*AHPH S300*
Efficiency class[1]		C	C	C
Heating medium circuit				
Max pressure in boiler section	MPa/bar	0.3/3		
Max temperature	°C	85		
Max heat pump size	kW	24		
Pipe connections				
Hot water	mm	–	Ø22	Ø22
Cold water	mm	–	Ø22	Ø22
Docking solar	mm	–	Ø22	–
Docking, high temperature (ext.)	G	G25	G25	–
Docking, level 1-3	mm	–	Ø22	–
Docking, supply line (external heat source)		–	–	G25
Docking, return line (external heat source)		–	–	G25
Volume boiler section	litre	270	250	250
Volume hot water coil	litre	–	17	17
Volume, solar coil	litre	–	4.4	–
Max pressure in hot water coil	MPa/bar	–	1.0/10	
Corrosion protection, hot water coil		–	Stainless steel	
Corrosion protection, solar coil		–	Copper	–
Capacity hot water heating according to EN 255-3				
Tap volume 40 °C at Normal comfort (V_{max})	litre	–	See diagram	
Dimensions and weight				
Width	mm	600	600	600
Depth	mm	600	600	600
Height	mm	1800	1800	1800
Required ceiling height	mm	1950	1950	1950
Weight	kg	105	126	116
Part No.		080 134	080 136	080 137

[1]Scale for the product's efficiency class A+ to F.
Tested according to standard EN 12897

Energy labelling

Supplier		*NIBE*		
Model		*AHP S300*	*AHPS S300*	*AHPH S300*
Energy efficiency class		**C**	**C**	**C**
Heat loss	W	89	89	89
Volume	l	270	267	267

Item register

Contact information

AUSTRIA

KNV Energietechnik GmbH
Gahberggasse 11, 4861 Schörfling
Tel: +43 (0)7662 8963-0
mail@knv.at
knv.at

CZECH REPUBLIC

Družstevní závody Dražice - strojírna s.r.o.
Dražice 69, 29471 Benátky n. Jiz.
Tel: +420 326 373 801
nibe@nibe.cz
nibe.cz

DENMARK

Vølund Varmeteknik A/S
Industrivej Nord 7B, 7400 Herning
Tel: +45 97 17 20 33
info@volundvt.dk
volundvt.dk

FINLAND

NIBE Energy Systems Oy
Juurakkotie 3, 01510 Vantaa
Tel: +358 (0)9 274 6970
info@nibe.fi
nibe.fi

FRANCE

NIBE Energy Systems France SAS
Zone industrielle RD 28
Rue du Pou du Ciel, 01600 Reyrieux
Tél: 04 74 00 92 92
info@nibe.fr
nibe.fr

GERMANY

NIBE Systemtechnik GmbH
Am Reiherpfahl 3, 29223 Celle
Tel: +49 (0)5141 75 46 -0
info@nibe.de
nibe.de

GREAT BRITAIN

NIBE Energy Systems Ltd
3C Broom Business Park,
Bridge Way, S41 9QG Chesterfield
Tel: +44 (0)845 095 1200
info@nibe.co.uk
nibe.co.uk

NETHERLANDS

NIBE Energietechniek B.V.
Energieweg 31, 4906 CG Oosterhout
Tel: +31 (0)168 47 77 22
info@nibenl.nl
nibenl.nl

NORWAY

ABK AS
Brobekkveien 80, 0582 Oslo
Tel: (+47) 23 17 05 20
post@abkklima.no
nibe.no

POLAND

NIBE-BIAWAR Sp. z o.o.
Al. Jana Pawla II 57, 15-703 Bialystok
Tel: +48 (0)85 66 28 490
biawar.com.pl

RUSSIA

EVAN
bld. 8, Yuliusa Fuchika str.
603024 Nizhny Novgorod
Tel: +7 831 419 57 06
kuzmin@evan.ru
nibe-evan.ru

SWEDEN

NIBE Energy Systems
Box 14
Hannabadsvägen 5, 285 21 Markaryd
Tel: +46 (0)433-27 3000
info@nibe.se
nibe.se

SWITZERLAND

NIBE Wärmetechnik c/o ait Schweiz AG
Industriepark, CH-6246 Altishofen
Tel. +41 (0)58 252 21 00
info@nibe.ch
nibe.ch

For countries not mentioned in this list, contact NIBE Sweden or check nibe.eu for more information.

NIBE Energy Systems
Hannabadsvägen 5
Box 14
SE-285 21 Markaryd
info@nibe.se
nibe.eu

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