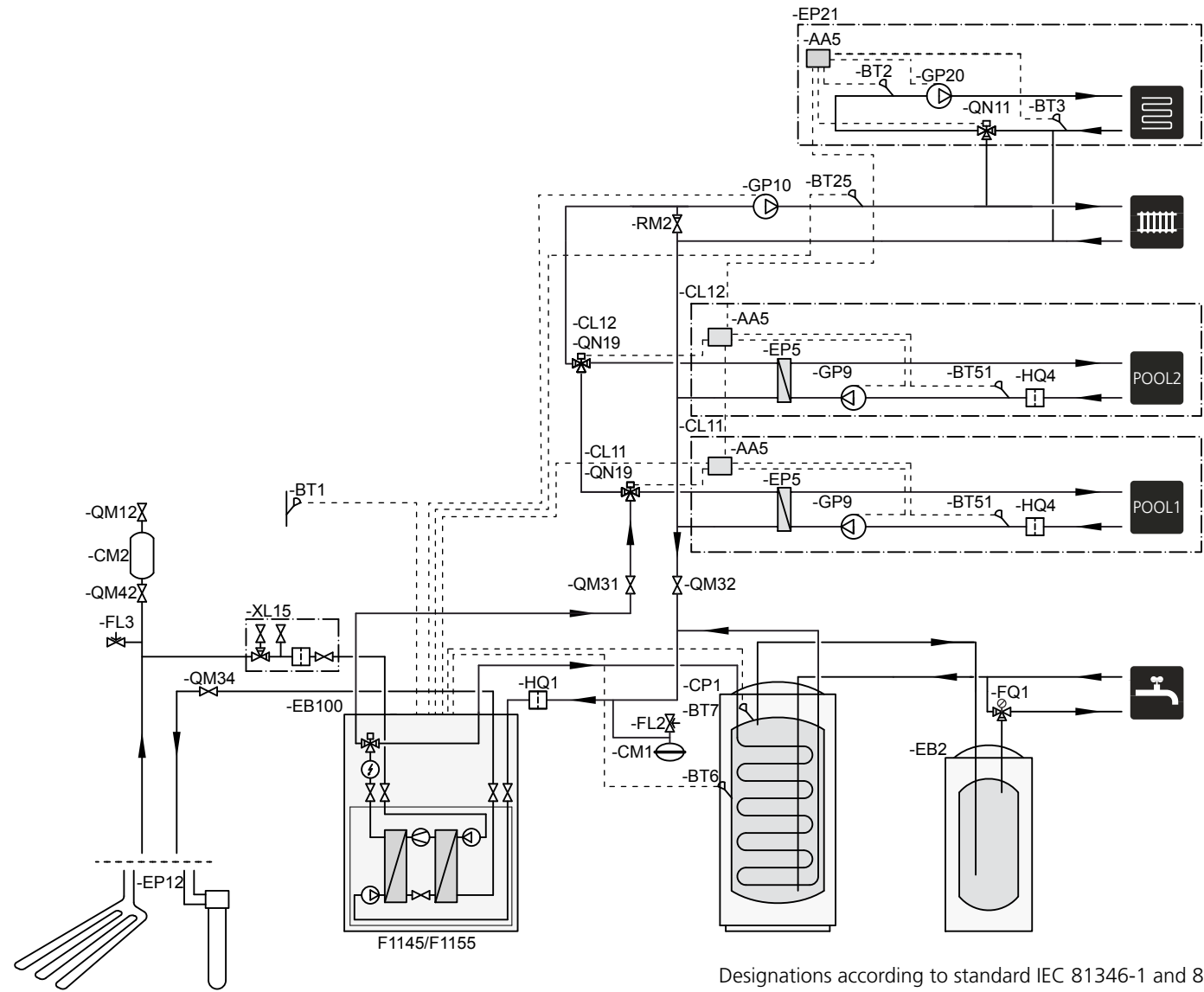


Outline principle

F1145/F1155 with SPA and POOL (floating condensing).

Application

Houses with water-borne heating systems.



NOTE! This is an outline diagram. Actual installation must be designed according to applicable norms.

See the appropriate "Installer manual" and/or "Installation and Maintenance Instructions" for more information.

Designations according to standard IEC 81346-1 and 81346-2.

Operate modes

Heat production

F1145/1155 is equipped with an outdoor temperature controlled heating control system. This means that the supply of heat to the house is regulated in accordance with the chosen setting of the regulating curve (curve slope and offset). After adjustment, the correct amount of heat for the outdoor temperature is supplied. The supply temperature of the heat pump will hunt around the required value. For subnormal temperatures the control system calculates a heating deficit in the form of "degree minutes", which means that heating production is accelerated. The lower the subnormal temperature, the greater the heat production. The internal immersion heater is connected automatically when the energy requirement exceeds the heat pump's capacity.

Hot water production

If the water heater is docked to F1145/1155 when there is a demand for hot water, the heat pump gives this priority and devotes its entire output to hot water heating. No room heat is produced in this mode. Maximum time for hot water charging can be adjusted in the menu system. Hot water charging starts when the hot water sensor has fallen to the set start temperature. Hot water charging stops when the hot water temperature on the hot water sensor (BT6) has been reached. For occasional higher demand for hot water, there is a function called "temporary lux" that allows the temperature to be raised for 3 – 12 hours (selected in the menu system). Periodic hot water increase is factory set to every 14 days.

Cooling production

Passive cooling, cooling function without the compressor running, is achieved by connecting a cooling system to the heat pump's brine circuit. The collector's low temperature can be utilised for comfort cooling.

When cooling is required (activated from the outdoor sensor and any room sensor) the circulation pump is activated and the shunt valve provides the correct supply temperature.

Functions/accessories

Heat pump

The compressor in a F1145 is the on/off type. The entire compressor output is routed to heating, hot water or any pool heating. If the output is not sufficient, additional heat engages automatically.

The compressor in a F1155 is the inverter type. The compressor output is adjusted according to the demand and routed to heating, hot water or any pool heating. If the output is not sufficient, additional heat engages automatically.

AUX inputs

F1145/1155 has software controlled inputs for connecting the switch function or sensor. This means that when an external switch function or sensor is connected to one of five AUX connections, the correct function must be selected for the correct connection. For further information see the Installer's manual.

The following functions can be controlled:

- Temperature sensor, hot water top
- Temperature sensor, cooling/heating
- Blocking of additional heat and/or compressor
- Blocking heating
- Tariff blocking
- Switch for "SG ready"
- Forced control of brine pump
- Activating temporary lux (extra hot water)
- External adjustment of the supply temperature
- Activating fan speed (requires accessory NIBE FLM)
- NV 10, pressure/level/flow monitor brine

All control signals should occur with potential-free relays.

AUX outputs

It is possible to have an external connection through the relay function via a potential-free variable relay (max 2 A) on the input circuit board (AA3), terminal block X7.

Optional functions for external connection:

- Indication of common alarm (preselected at the factory).
- Controlling ground water pump.
- Cooling mode indication (only applies if cooling accessories are available).
- Control of circulation pump for hot water circulation.
- External circulation pump (for heating medium).
- External, reversing valve for hot water.

If any of the above is installed to terminal block X7 it must be selected in the control system.

The accessory card is required if two or more of the above functions are to be connected to terminal block X5 at the same time.

Room control

F1145/1155 can be supplemented with a room sensor (BT50).

The room sensor has up to three functions:

- Show current room temperature in the heat pump's display.
- Option of changing the room temperature in °C.
- Makes it possible to change/stabilise the room temperature.

Install the sensor in a neutral position where the set temperature is required. A suitable place is on a free inner wall in a hall approx. 1.5 m above the floor. It is important that the sensor is not prevented from measuring the correct room temperature by being located, for example, in a recess, between shelves, behind a curtain, above or close to a heat source, in a draft from an external door or in direct sunlight. Closed radiator thermostats can also cause problems.

The heat pump operates without the sensor, but if one wishes to read off the accommodation's indoor temperature in the F1145/1155 display the sensor must be installed.

External circulation pump

With the AXC 40 accessory (an AXC 40 for each accessory function that is to be used) an external circulation pump (for the climate system) can be connected to the heat pump if the alarm relay (AUX output) is activated for another function. The function is already included in the following accessory functions:

- Step controlled additional heat
- Shunt controlled additional heat
- Pool

Spa and Pool

This function requires 2 x POOL 40 accessories.

Two three-way valves can be connected to control all of the heating medium supply to one of the pool exchangers. The reversing valves are installed on the heating medium circuit, which normally runs to a radiator system. An external circulation pump (GP10) must be installed for pool operation.

During pool heating the heating medium is circulated between the heat pump and the pool exchanger using the heat pump's internal circulation pump.

The external circulation pump circulates the heating medium water in the climate system. The external supply temperature sensor (BT25) continually checks the house's heating requirement and additional heat is connected as necessary.

Up to two different pool systems can be connected to F1145/1155 and controlled individually.

Extra climate system

This function requires accessory ECS 40/ECS 41. A shunt valve, supply and return line sensor and a circulation pump are connected to a second heating circuit with a lower temperature demand (e.g. under floor heating system). The temperature in the extra climate system is controlled by the heat pump and the shunt valve by offsetting the heating curve (each climate system has its own heating curve), room sensor or room unit. Up to 3 extra climate systems can be connected to the heat pump.

List of Components

F1145/F1155 with SPA and POOL (floating condensing).

Pos	Name	Specification	Manufacturer	Art no.	Remarks
EB100	Heat pump	F1145/F1155	NIBE		
XL15	Filling set, HTF	HTF R25/G32	NIBE	089 368/089 971	HTF R25 (max 12 kW) HTF G32 (max 30 kW)
CM2	Level vessel HTF		NIBE		Level vessel at open system. Level vessel included in F1145/F1155.
FL3	Valve, Safety, HTF		NIBE		Included in F1145/F1155
HQ1	Particle filter HM		NIBE		Included in F1145/F1155
BT1	Temp.sensor, Outdoor		NIBE		Included in F1145/F1155
CM3	Expansion vessel HTF				Expansion vessel at closed system.
EP12	Collector, HTF				
BP6	Manometer, HTF				
QM12	Filling valve, HTF				
QM21	Vent valve, HTF				
QM34	Shut off valve, HTF-f				
QM42	Shut off valve, HTF-r				
CM1	Expansion vessel, closed, HM				
FL2	Safety valve, HM				
QM31	Shut off valve, HM-f				
QM32	Shut off valve, HM-r				
	Hot water				
CP1	Water heater	VPB 200/VPB 300/VPB 500	NIBE		VPB 200/VPB 300, max 12 kW
BT6	Temp. sensor, HW charging		NIBE		Included in F1145/F1155
BT7	Temp. sensor, HW top		NIBE		Included in F1145/F1155
	Extra Hot Water				
EB2	Water heater	Compact / Eminent	NIBE		
FQ1	Mixer valve				Thermal

F1145/F1155 with SPA and POOL (floating condensing).

Pos	Name	Specification	Manufacturer	Art no.	Remarks
System 2 Present					
EP21	Climate system 2	ECS40/ECS41	NIBE	067 287/067 288	
AA5	Accessory card		NIBE		Included in ECS 40/41
GP20	Circulation pump, HM Lower shunt		NIBE		Included in ECS 40/41
QN11	Shunt valve, heating system 2		NIBE		Included in ECS 40/41
BT2	Temp.sensor, HM, Flow		NIBE		Included in ECS 40/41
BT3	Temp.sensor, HM, Return		NIBE		Included in ECS 40/41
CL11-CL12 Pool system 1-2					
AA25	Unit box		NIBE		Included in POOL 40 (Art no. 067 062)
BT51	Temperature sensor, pool		NIBE		Included in POOL 40 (Art no. 067 062)
EP5	Heat exchanger, pool				
GP9	Circulation pump, pool				
HQ4	Particle filter				
QN19	Reversing valve, pool		NIBE		Included in POOL 40 (RSK no. 067 062)
RN42	Trim valve				
HQ4	Particle filter Pool				
GP10	Circulation pump, HM external				
RM2	Non-return valve				