

Air source heat pump



vamp^{air}

Heating



+



Cooling



A+++

SCOP up to 4,95
medium climate
at 35°C Flow T°




- + Plug & Heat
- + Low-Noise Technology
- + Inverter technology



SOLARFOCUS





Energy is in the air

The correct selection of the heating system is an important decision that will have an impact for many years.

With an air source heat pump you can heat cost-effectively, especially in new built low energy houses and systems with medium flow temperatures.

Compact air source heat pump

Perfect for all seasons



Heating
Cooling
Hot
water

vamp^{air} - Energy from the air

- + Inverter technology adapts to the heat demand
- + Enhanced vapour injection for high flow temperatures also at low outside temperatures (- 22°C)
- + Compact system with longer life time

How it works

The function of a heat pump is similar to that of a refrigerator, but reversed. By using an air heat exchanger (evaporator), energy is taken from the ambient air to heat up the heating water and the sanitary hot water.

Evaporator(1)

The evaporator is a heat exchanger that takes energy from ambient air and transforms it to the circulating refrigerant to change its state from liquid to gaseous.

Modulating compressor (2)

In an electrically driven compressor, the refrigerant gas is brought to a high temperature by compression.

Condenser (3)

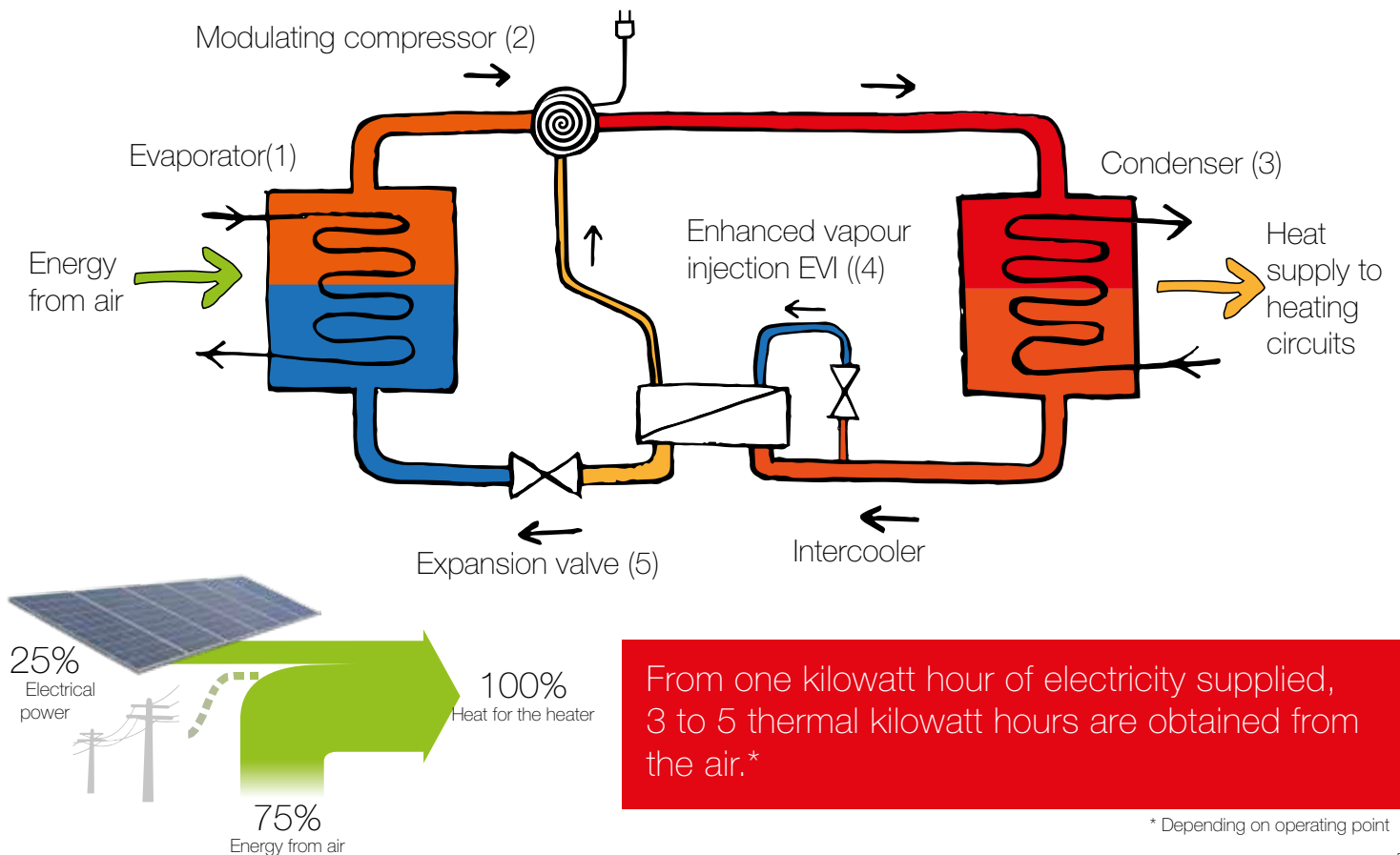
The absorbed thermal energy is delivered to the heating system. The gaseous refrigerant cools and liquefies again.

Enhanced vapour injection EVI (4)

Enhanced vapour injection increases the efficiency, while the power requirement is reduced at the same time. Thus higher flow temperatures and higher heating output (especially at low ambient temperatures) are possible for the same unit size. Furthermore, the compressor temperature is reduced, which increases the lifetime of the compressor.

Expansion valve (5)

In the expansion valve, the refrigerant is cooled by sudden release and the cycle begins anew.



* Depending on operating point

Innovative technical solutions

- + Highly efficient
- + Whisper-quiet
- + The most modern control technology



What I should know:

COP (Coefficient of Performance)

The coefficient of performance (=COP) indicates how efficiently the heat pump is operating at a certain operating point. A typical operating point is A2/W35, where A2 represents 2°C outside temperature and W35 represents 35°C heating water flow temperature. Also often seen is this information at A7/ W35. While these COP values look much better due to higher outside temperatures, they do not correspond to the usual standard. An efficient heat pump can be recognised, among other things, in high performance figures even at low outside temperature, such as at A-7/W35.

Annual performance factor APF

The annual performance factor (=APF) indicates how well the heat pump is operating in different operating conditions over a period of one year. Depending on the heating system, the APF of **vamp^{air}** is between 3 to 5. High efficiency can only be achieved through careful technical planning and installation and low temperature heating systems (e.g. underfloor heating).

It makes heating fun!

Inverter technology

With the air source heat pump **vamp^{air}** with inverter technology, the heat output is modularly adapted to the heat demand of the home (12- 100%), regardless of whether low or high ambient temperatures prevail.

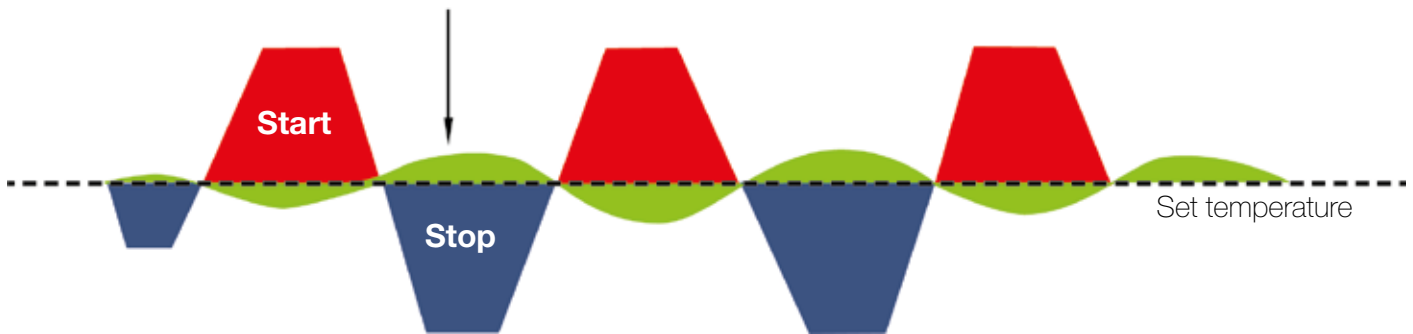
Even hot water is prepared exactly as required. The ventilation runs at a lower speed on average and therefore makes very little noise.

Your benefit

- + No uneconomical start-stops
- + Precise power adjustment for every season
- + Additional noise reduction in reduced mode

— Without Inverter technology
— With Inverter technology
- - - Set temperature

With Inverter technology the output of the heat pump is constantly adjusted to the permanent temperature



Without inverter technology– many Start-Stop phases

Cooling in summer

The compact heat pump **vamp^{air}** has a cooling function as standard. Through the weather forecasting function (SOLARFOCUS Weatherman) an overheating of the building is avoided already at the outset and energy savings are achieved.

If it gets too hot anyway, the cooling function is activated by reverse circulation. Living areas are cooled by drawing the heat from the rooms with the surface heating system (for example underfloor heating or wall heating).



Low-Noise Technology

Silent isn't enough?

The decisive factors to minimise

Fan

The radial-axial design combines the best of two worlds. On the one hand to achieve a straight air flow and on the other hand a high efficient pressure rise.

Thanks to the exceptional blade geometry, there are hardly any air, performance and deflection losses.

The EC technology (electronically commutated motor) guarantees the highest efficiencies.



Noise cancelling fins

Noise reduction

It is in the nature of things that a fan produces a certain noise level. But even the best and quietest fans can be made even quieter by appropriate measures. One of these measures is the use of noise reducing fins. A welcome side effect is improved protection against wind driven rain as the fins permit hardly any water to penetrate into the housing of the heat pump.

Screening

A rotating movement around its own axis is very rarely found in nature. Visible fan rotation is considered to be bothersome. A screen through fins helps.



unpleasant air noise are air turbulences

Fin evaporator

The finned evaporator consists of a high-quality aluminium-copper heat exchanger with hydrophilic coating and generous lamella distance of 3 mm. The hydrophilic coating allows water to run faster and improves heat transfer from air to the refrigerant. In addition, this means that the evaporator ices up less quickly.

By contrast, the hydrophobic coating would form large drops, which would then ice up the evaporator quickly. The spherical water drops block two fins and thus block the path of the air.

The time between defrost cycles is thus prolonged, whereby a more constant operation is ensured. This means a permanent defrosting of the heat pump is not required.

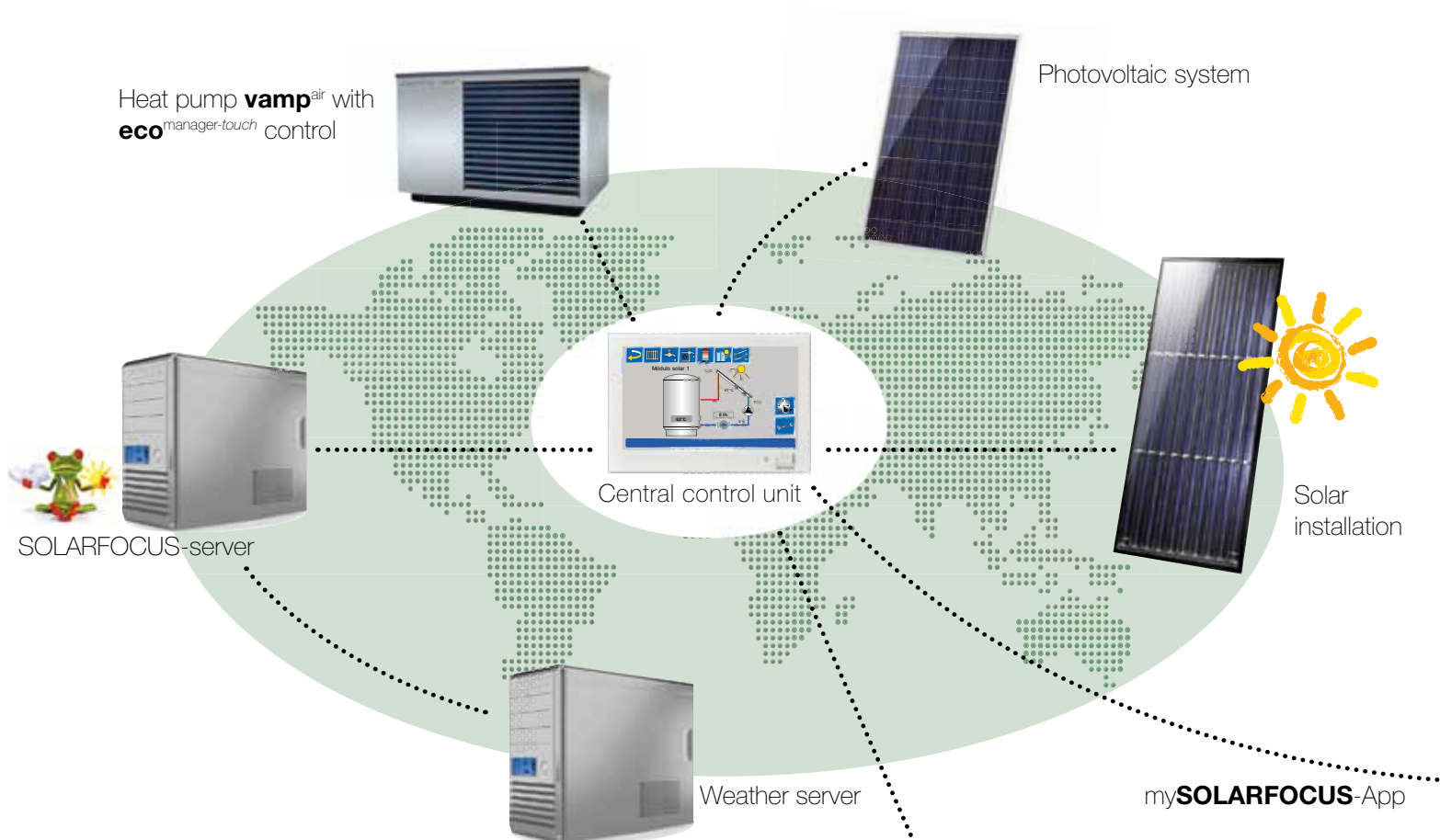
Your benefit

- + Low-Noise Technology
- + Hardly any air, performance and deflection losses
- + Optimum efficiency
- + Fins protect against wind driven rain
- + No permanent defrosting of the heat pump



Intelligent smart control

- + Intuitive control unit with 7" touchscreen display
- + Takes the weather forecast into consideration
- + mySOLARFOCUS app
- + SmartGrid ready



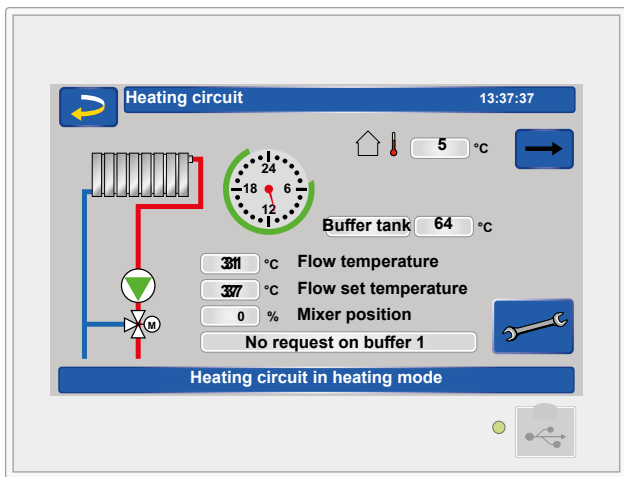
SMART HOME CONNECTION

Everything at one glance: status of the heating circuit pumps, various buffer and DHW values, flow temperature and much more.

With the modbus TCP connection, the products of SOLARFOCUS can be integrated into solutions SMART HOME without additional extensions.



SMART HOME CONNECTION

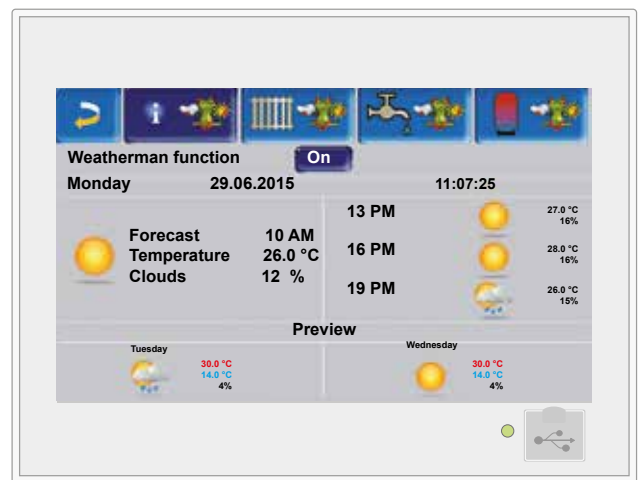


eco^{manager-touch} control unit

If the heat pump is used in combination with a solar system, it only starts when the required heating energy cannot be provided in full by the solar system. The **eco^{manager-touch}** is very easy to use. It enables individual settings and ensures a perfectly tailored heating management.

Weather forecasting function

The weather forecasting function (Weatherman) is integrated into all SOLARFOCUS heat pumps as standard. This remarkable innovation not only gives the user added convenience but also helps saving money. The control unit accesses live data from a weather server and uses this to tell the heat pump when to heat – or when to remain inactive, because sunshine is expected.



my**SOLARFOCUS**-App

You can control the heating system even more comfortably with the **mySOLARFOCUS** app. In combination with the Weatherman, it takes just a few seconds to set your heating via your smartphone. And you can use it wherever you are: in the office, on your sofa or on holiday. App for smartphone (Android and Apple) with attractive design for intuitive operation of the main heating parameters. Possibility to visualise the solar yield with the installed heat meters and control unit via **eco^{manager-touch}**.

Heat pump and PV the unique success duo

Heat pumps and photovoltaic systems are a strong pair - especially when they are coordinated with each other. At the specialist SOLARFOCUS, the newly developed control strategy has made it possible to significantly reduce the amount of power drawn from the grid compared to conventional systems..

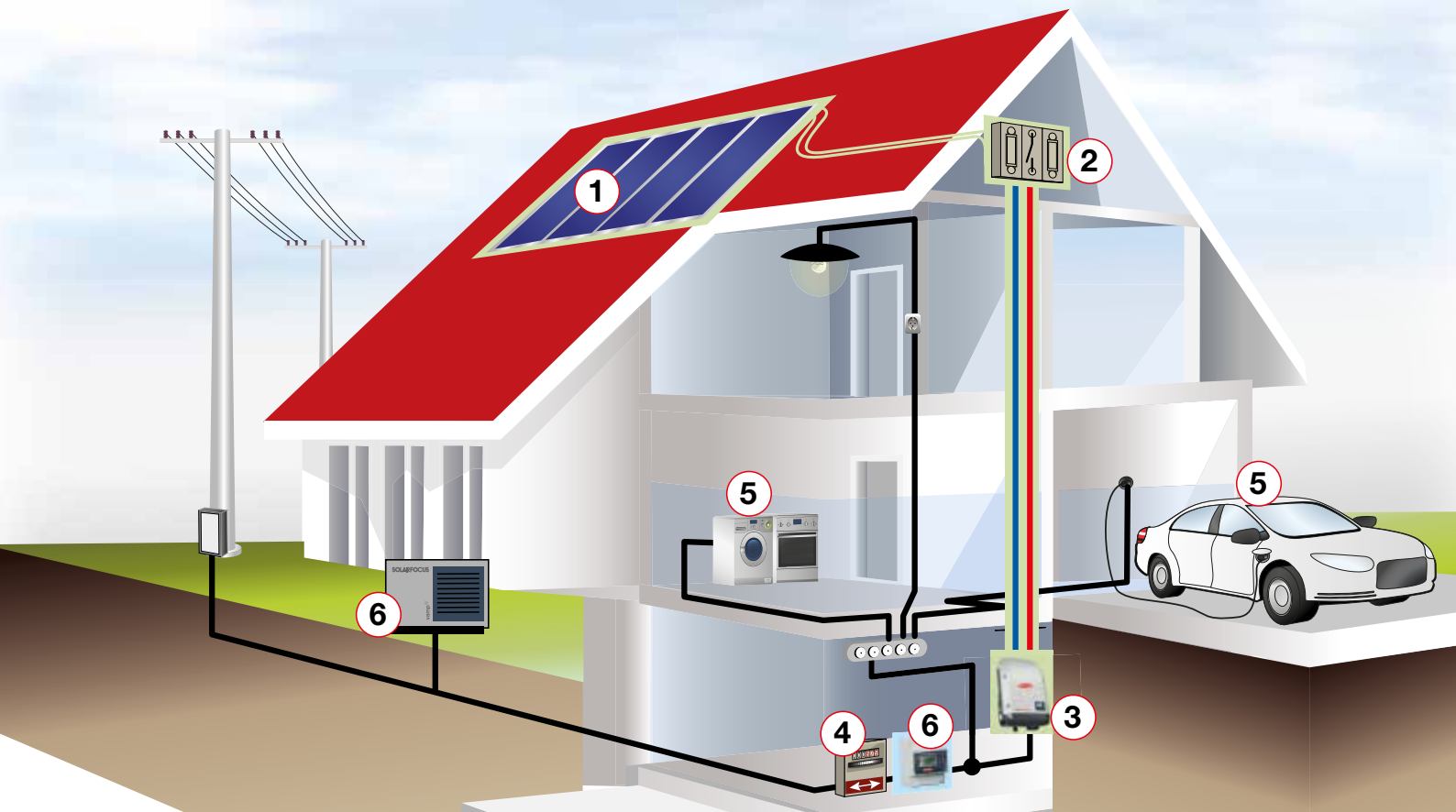
Surplus electricity from the PV system that is not needed is refined with the help of the vampair heat pump. Thanks to the very efficient efficiency, electricity can be converted into heat with a ratio of up to 1:5, i.e. 1 kW input of electricity results in approximately 5 kW output of heat. This heat is temporarily stored in a domestic hot water tank, buffer tank, screed or concrete core activation and is easily available when heat is needed.

This is especially useful in the transitional periods: during the day it is often so warm that the heat pump does not have to switch on, but at night it cools down considerably. If you now have a PV system and a heat pump from SOLARFOCUS, the heat energy generated and stored free of charge during the day heats the house at night - without the heat pump being in operation. In addition, the heat pump can also cool for free in the summer.



The prerequisite for this optimized self-consumption is a heat pump with inverter technology (modulating operation) and a perfectly coordinated control system.

The **vamp**air from SOLARFOCUS is equipped with this advanced technology for Fronius and SolarEdge inverters and can therefore be operated even with low surpluses of solar energy. Alternatively, the entire system can be **LOXONE** be integrated.



A photovoltaic system with surplus feed-in pays for itself the faster, the higher the self-consumption. If a heat pump is added to the household's usual electricity consumption, the share of self-consumption can be noticeably increased.

PV modules (1)

PV modules convert sunlight into electrical energy. SOLARFOCUS offers high quality polycrystalline modules with leading product and linear performance guarantee.

Generator junction box GAK (2)

The generator junction box (GAK) connects the solar modules to the inverter and performs various protective functions.

Inverter (3)

The inverter converts the direct current (DC) into alternating current (AC). At the same time, it monitors and controls the photovoltaic system to ensure maximum power output.

The MPP tracker guarantees maximum yields with different module orientations. Efficient monitoring thanks to clear consumption visualization.

2-direction meter (4)

In a system with surplus feed-in, the electricity drawn from the grid (when more electricity is needed in the household than is produced) and the electricity

supplied (when the PV system produces more than is consumed in the household) to the grid are measured separately.

Energy supply companies use so-called 2-direction meters for this purpose. The existing electricity supply meter is replaced by a 2-direction meter.

Consumer (5)

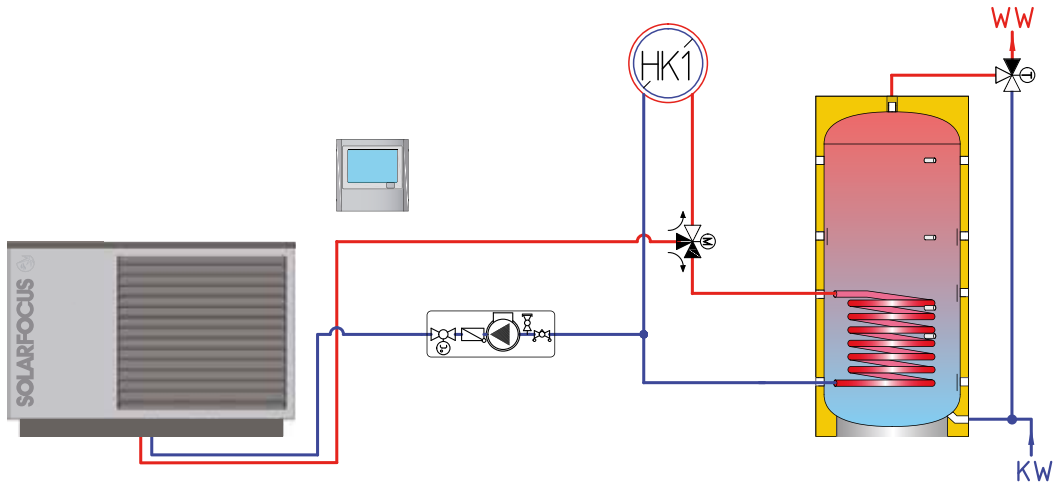
All consumers in the house can continue to be used without conversion or upgrading. The more solar electricity is consumed by the system operator himself, the more economical the system is.

Forced operation of heat pump (6)

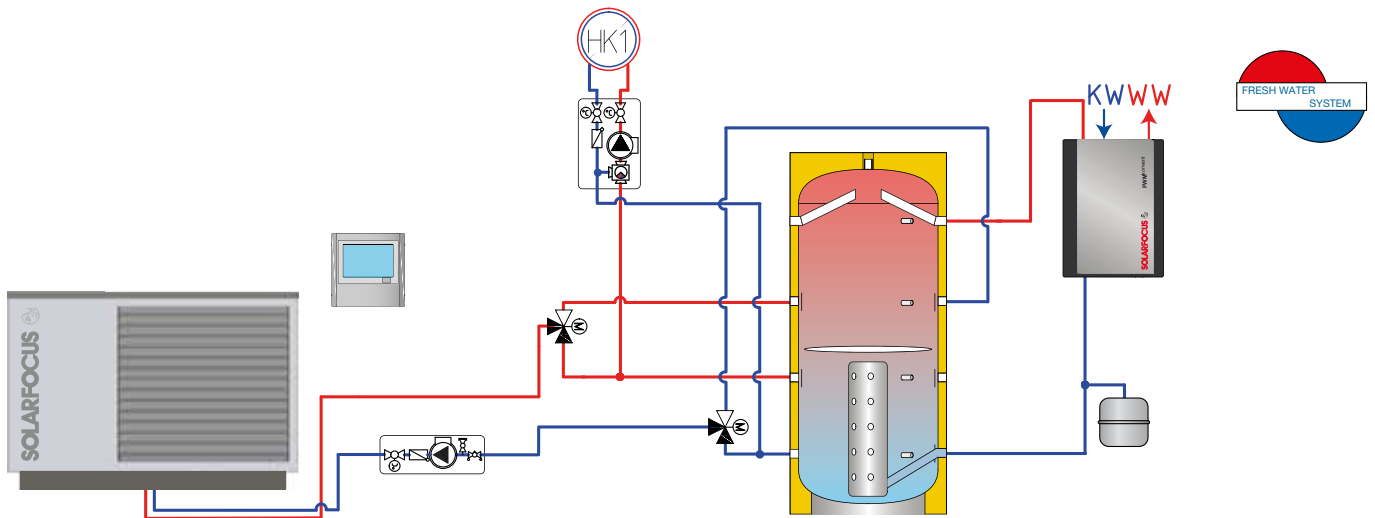
In order to further increase self-consumption, the **vamp^{air}** air-source heat pump can be operated in forced mode for heating, hot water production or even cooling in summer. With the help of an additional smart meter, the electricity flows in the household are recorded and the heat pump can refine the excess electricity.

Simple hydraulic integration

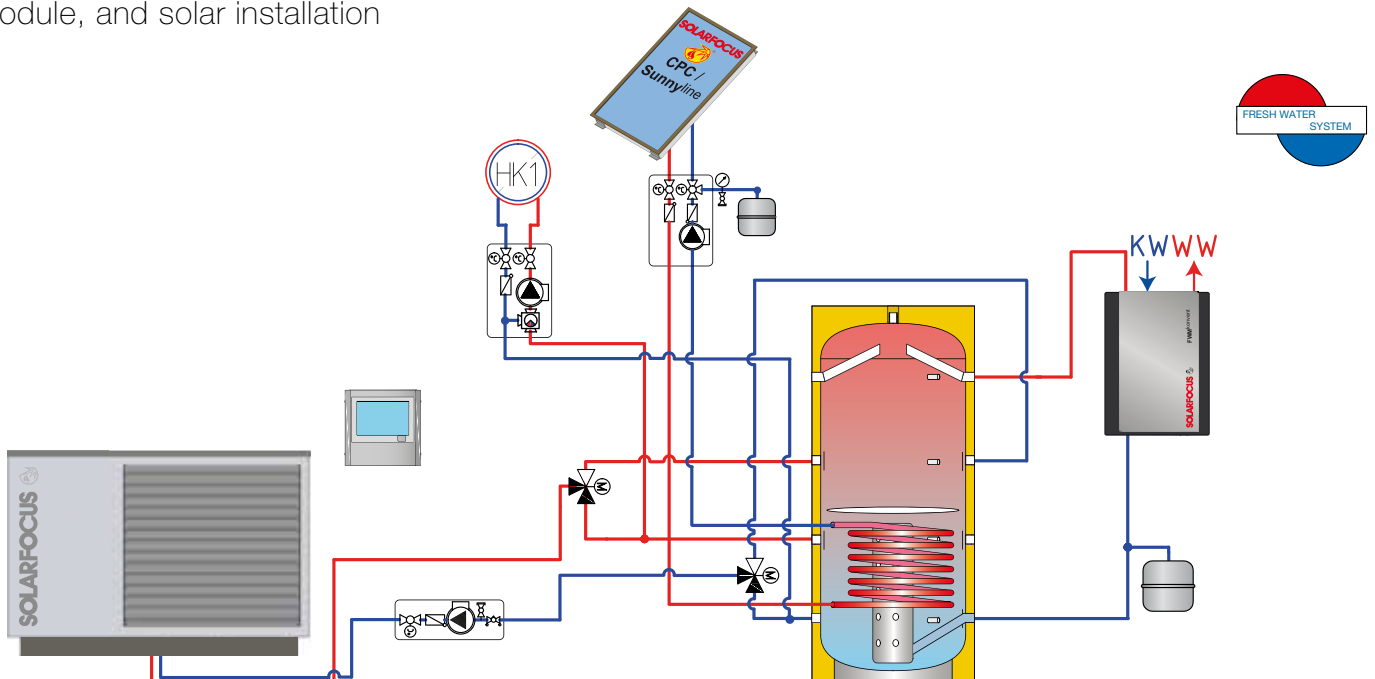
Air source heat pump **vamp^{air}** with a heating circuit and sanitary hot water tank



Air source heat pump **vamp^{air}** with a heating circuit, stratified buffer tank and fresh water module

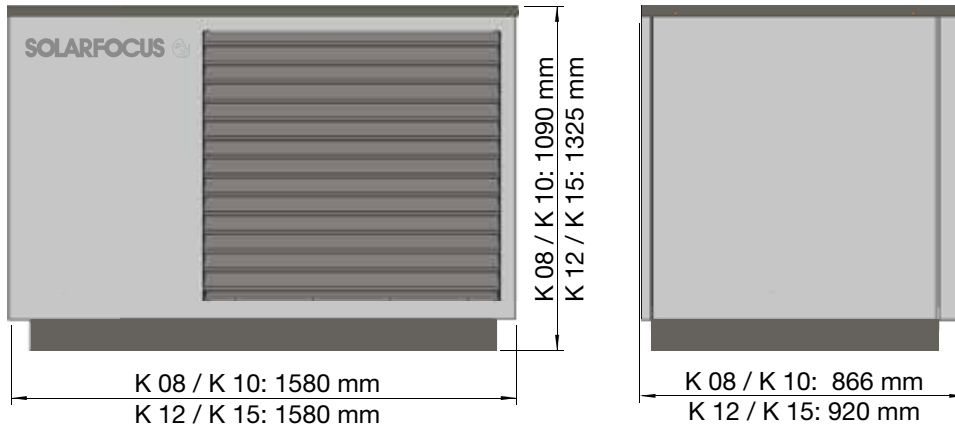


Air source heat pump **vamp^{air}** with a heating circuit, stratified buffer tank with solar coil, fresh water module, and solar installation



Technical specifications

Air source heat pump **vamp**^{air}



vamp^{air}

	K 08	K 10	K 12	K 15
System label heating appliance 35°C / 55°C	A++ / A++	A+++ / A+++	A+++ / A++	A+++ / A+++
Product label heating appliance 35°C / 55°C	A++ / A++	A+++ / A++	A++ / A++	A+++ / A+++
SCOP _{EN14825} medium climate 35°C / 55°C	4,20 / 3,40	4,73 / 3,80	4,40 / 3,40	4,95 / 3,85
η_s season dependent room heat Energy efficiency, medium climate 35 / 55 °C	165 % / 133 %	186 % / 147 %	173 % / 133 %	195 % / 151 %
Recommended building heat load ¹ up to approx.	5,7 kW	7,8 kW	9,4 kW	15 kW
Heat performance at A7/W35	2,90 bis 8 kW	2,90 bis 9,50 kW	4,70 bis 14 kW	4,70 bis 18 kW
Max. heat performance at A-10/W35	5,3 kW	7,0 kW	9,4 kW	13,7 kW
Max. cooling performance at A35/W18	5 kW	6 kW	10 kW	15 kW
Max. cooling performance at A35/W7 ²	4 kW	5 kW	8 kW	13 kW

Performance data (partial load):

Heat performance / COP at A10/W35	4,57 kW / 5,30	6,09 kW / 5,40	6,46 kW / 5,40	11,56 kW / 5,50
Heat performance / COP at A7/W35	4,29 kW / 4,83	6,19 kW / 4,97	6,06 kW / 5,00	11,98 kW / 5,00
Heat performance / COP at A2/W35	3,94 kW / 4,15	5,47 kW / 4,37	7,31 kW / 4,20	9,46 kW / 4,49
Heat performance / COP at A-7/W35	5,68 kW / 3,16	5,83 kW / 3,51	10,08 kW / 3,20	11,26 kW / 3,47

Noise emission:

Noise power level (EN12102)	45 dB(A)	50 dB(A)	48 dB(A)	55 dB(A)
Noise pressure level in 5 m distance, free field	18 dB(A)	21 dB(A)	22 dB(A)	22 dB(A)
Noise pressure level in 4 m distance, next to one wall	26 dB(A)	29,7 dB(A)	30 dB(A)	30 dB(A)
Noise power level max. (day / silent)	46 / 43 dB(A)	54 / 46,7 dB(A)	50 / 47 dB(A)	63 / 47 dB(A)

Technical:

Electrical connection compressor	3/N/PE ~400 V, 50 Hz		3/N/PE ~400 V, 50 Hz 1/N/PE ~230 V, 50Hz	
Max. current compressor	8 A		12 A	
Refrigerant	R410A			
Connection heating flow/return	G1" ET flat seal			
Max. flow temperature heating	65°C			
Usage limits for ambient air temperatures	- 22°C / + 35°C			
Dimension (w/h/d)	1580 / 1090 / 866 mm	1580 / 1090 / 866 mm	1580 / 1325 / 920 mm	1580 / 1325 / 920 mm

¹ Recommended building heating load at standard outside temperature -14 °C, heating temperature 15 °C, system temperature 35 °C, taking into account 5% proportion of the peak load heat generator (without hot water). ² with low-temperature cooling extension set

SOLARFOCUS offers you perfect support in planning, quotation and execution with a selection of several thousand standard hydraulic schemes!

Innovative products, which protect the environment and relieve the purse.

Quality made in Austria

- ✓ Biomass heating
- ✓ Air source heat pumps
- ✓ Solar panels
- ✓ Fresh water technology



Products for



Wood pellets



Pellets + Logs



Logs



Wood chips



Solar energy



Fresh water



Heat pump

Your area representative

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