

Air source heat pump

vamp^{air}



Heating



+



Cooling

A+++

SCOP = 4,95
Medium climate at 35°C VLT

**1.
Place**

www.topprodukte.at
Stand 08. 2019



- + 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)

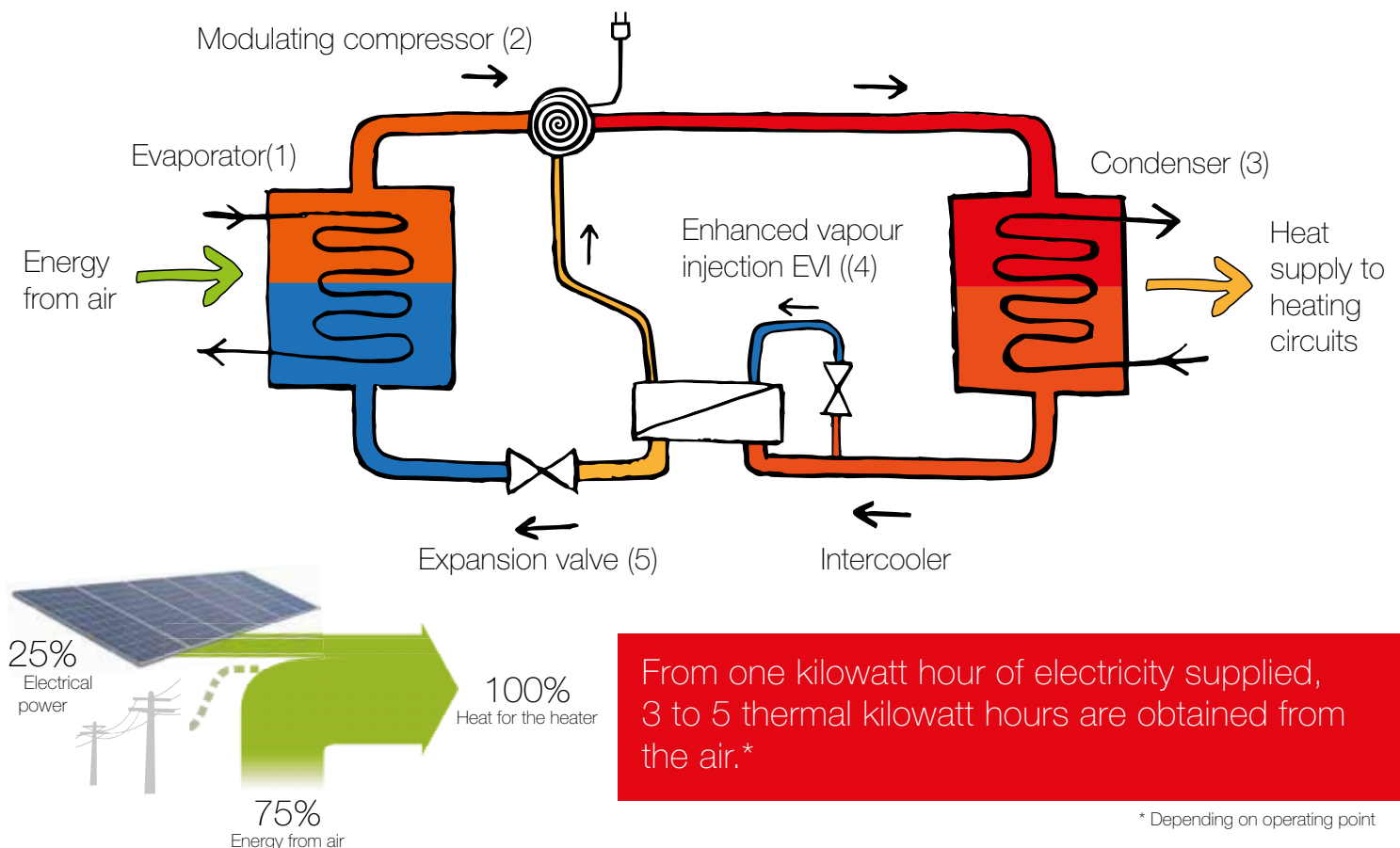
The absorbed thermal energy is delivered to the heating system. The gaseous refrigerant cools and liquefies again.

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.



Innovative technical solutions

- + Low space requirement
- + Extremely 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.

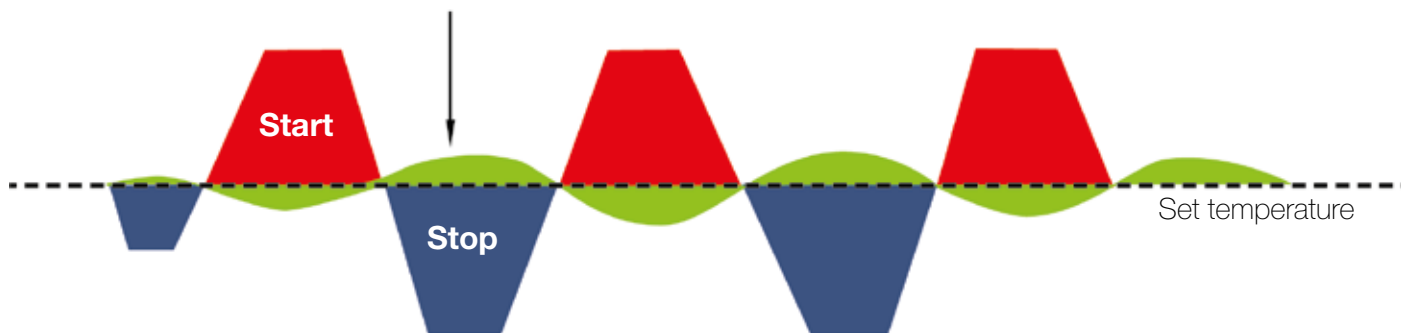
Even hot water is prepared exactly as required. The ventilation runs at a lower speed on average and therefore makes very little noise.

Your benefit

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



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 reducing 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

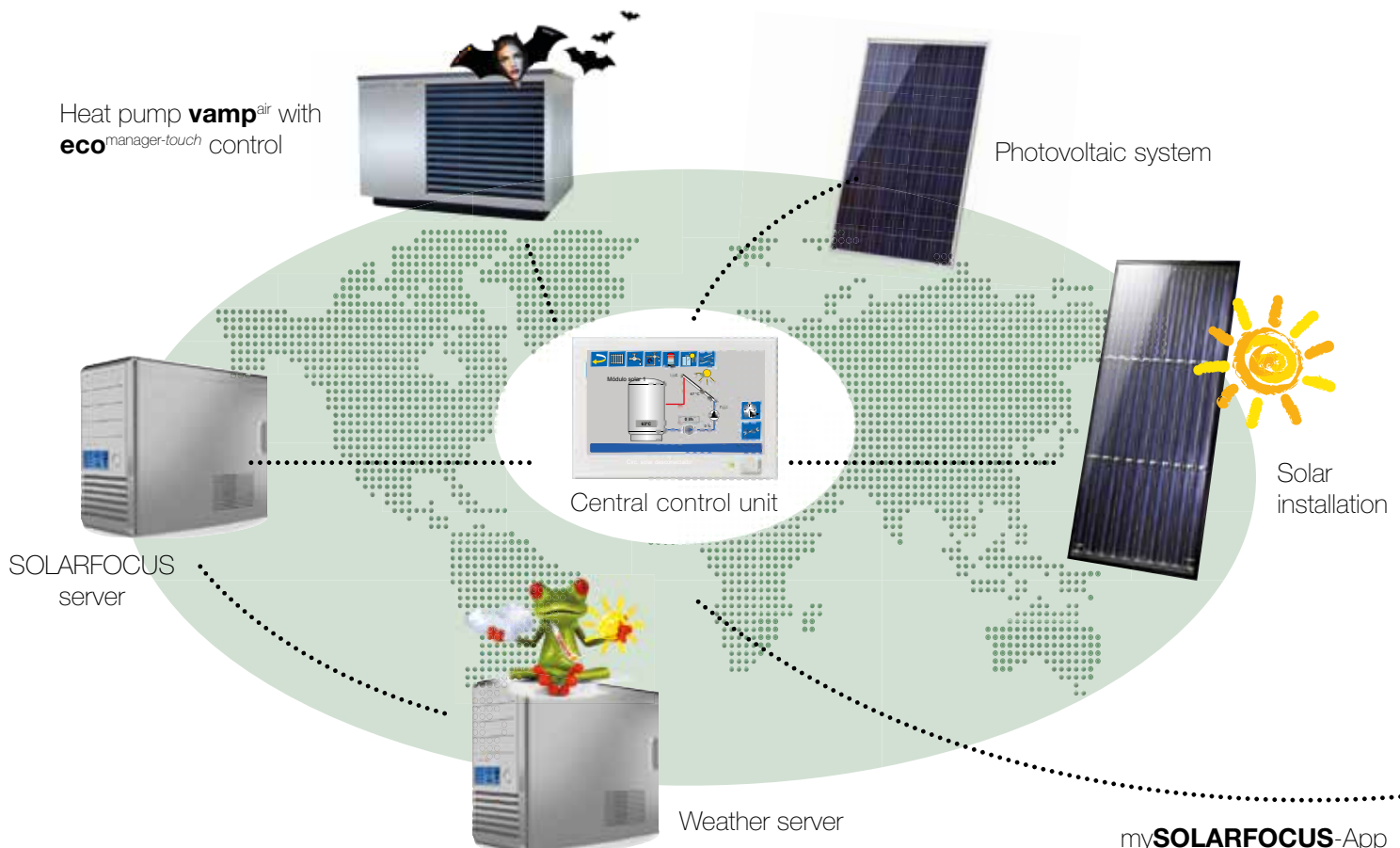
- + Low-Noise Technology
- + Hardly any air, performance and deflection losses
- + Optimum efficiency
- + Fins protect against wind driven rain
- + No permanent defrosting of the heat pump



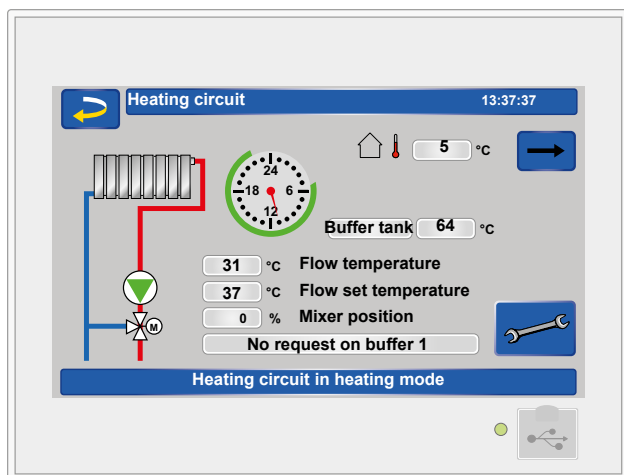
The bigger Fan and Evaporators are, the **quieter** and **more efficient** the heat pump!

Intelligent smart control

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



my**SOLARFOCUS**-App

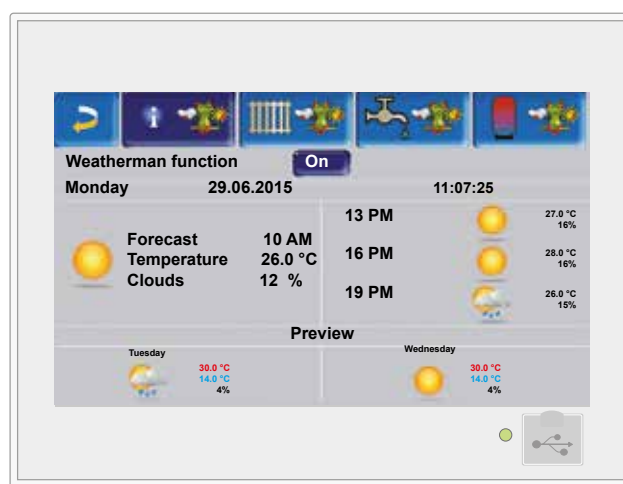


eco^{manager-touch} control unit

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.

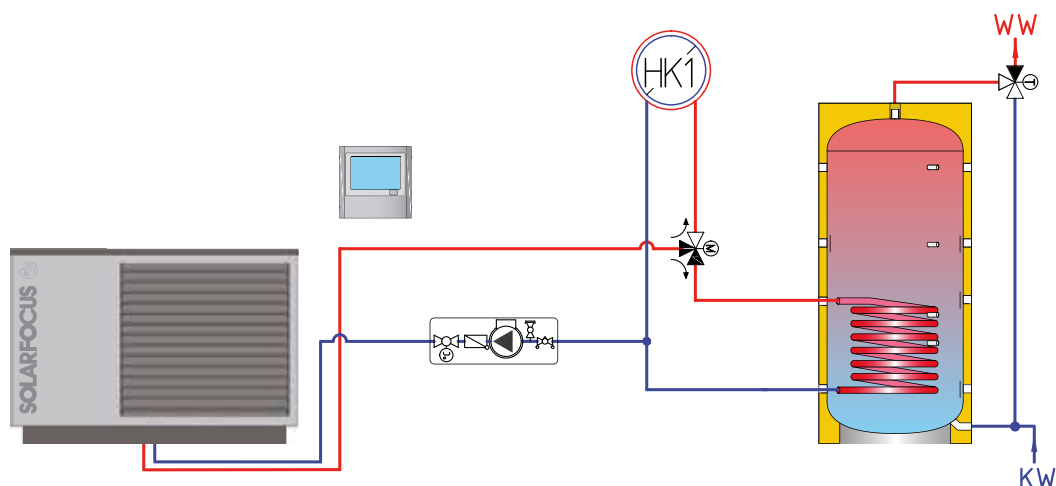


my**SOLARFOCUS**-App

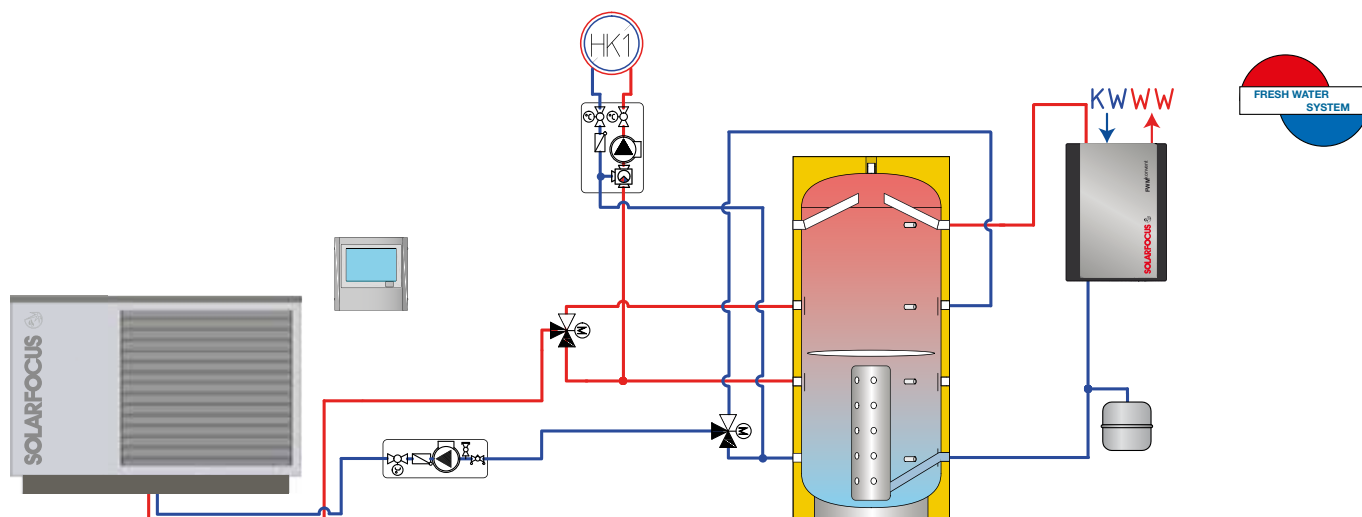
You can control the heating system even more comfortably with the **mySOLARFOCUS** app. In combination with the Weatherman, it takes just a few seconds to set your heating via your smartphone. And you can use it wherever you are: in the office, on your sofa or on holiday. App for smartphone (Android 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}**.

Simple hydraulic integration

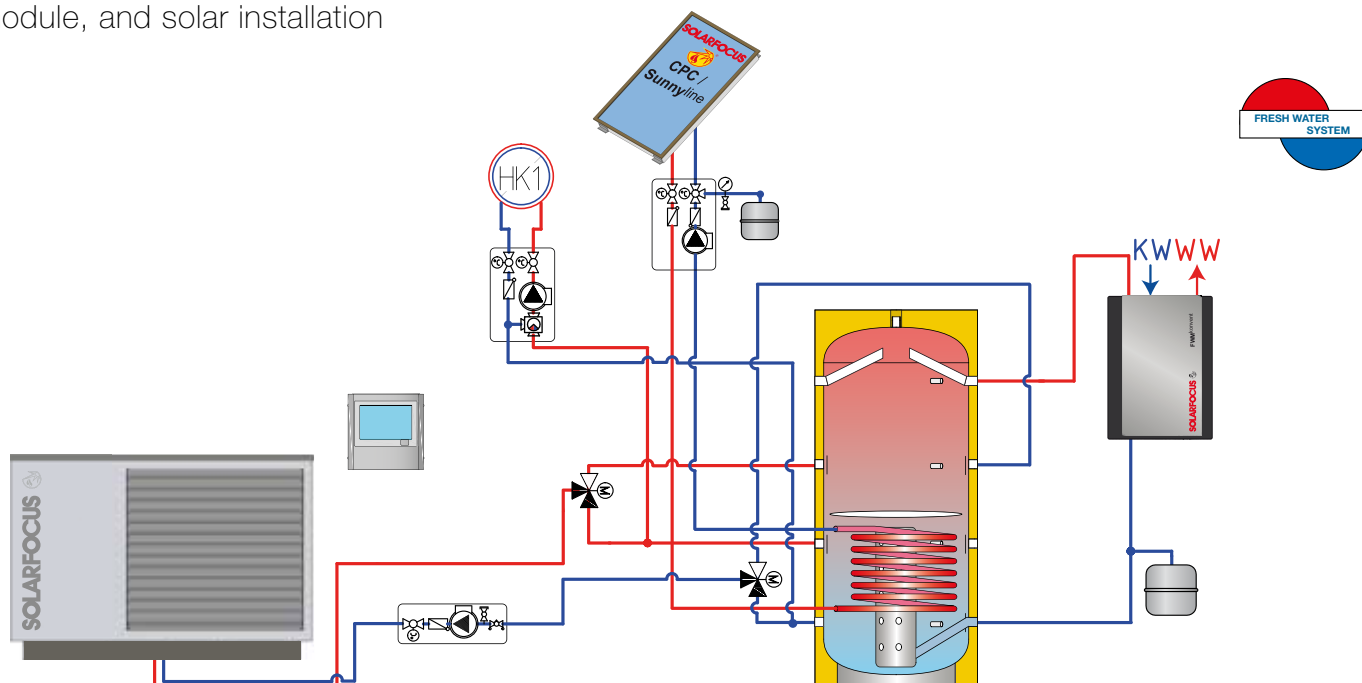
Air source heat pump **vamp^{air}** with a heating circuit and sanitary hot water tank



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

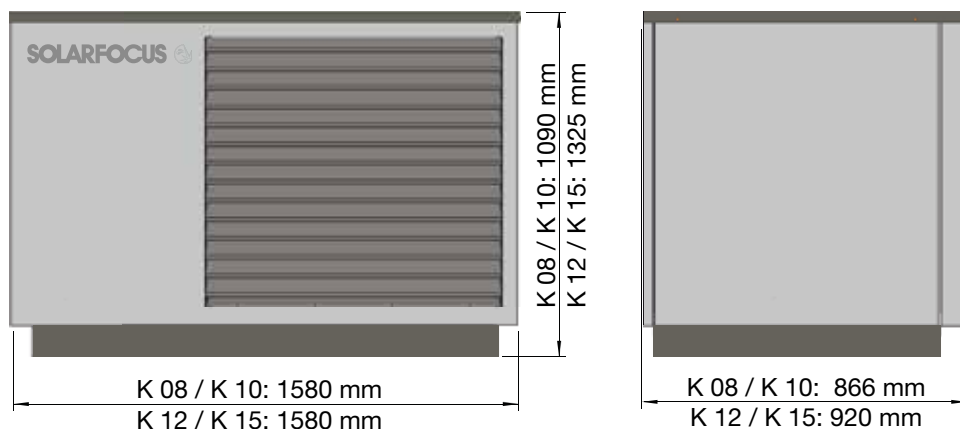


Air source heat pump **vamp^{air}** with a heating circuit, stratified buffer tank with solar coil, fresh water module, and solar installation



Technical data

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



vamp^{air}

	K 08	K 10	K 12	K 15
Pack label efficiency class heating 35°C / 55°C	A+++ / A+++	A+++ / A+++	A+++ / A+++	A+++ / A+++
Product label efficiency class heating 35°C / 55°C	A++ / A++	A++ / A++	A++ / A++	A++ / A++
SCOP _{EN14825} moderate climate 35°C / 55°C	4,20 / 3,40	4,73 / 3,80	4,40 / 3,40	4,95 / 3,85
η _s seasonal room heating efficiency, moderate climate 35 / 55 °C	165 % / 133 %	195 % / 147 %	173 % / 133 %	195 % / 151 %
Recommended building heat load ¹ up to	5,7 kW	7,8 kW	9,4 kW	15 kW
Heat power at A7/W35	2,90 - 8 kW	2,90 - 9,50 kW	4,70 - 14 kW	4,70 - 18 kW
Max. heat power at A-10/W35	5,3 kW	7,0 kW	9,4 kW	13,7 kW
Max. cooling power A35/W18	5 kW	6 kW	10 kW	15 kW
Max. cooling power A35/W7 ²	4 kW	5 kW	8 kW	13 kW

Power data (part load):

Heat power / 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 power / 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 power / 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 power / 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:

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

Execution:

Elektrical connection compressor	3/N/PE ~400V, 50 Hz / 1/N/PE ~230V, 50 Hz			
Max. current compressor	8 A / 25A		12 A / 35A	
Refrigerant	R410A			
Connections heating flow / return	G5/4" AG			
Max. flow temperature heating	65°C			
Air Temperature operating limits heating	- 22°C / + 35°C			
dimensions (W/H/D)	1580 / 1090 / 866 mm	1580 / 1090 / 866 mm	1580 / 1325 / 920 mm	1580 / 1325 / 920 mm

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

SOLARFOCUS offers a perfect support for planning, offer and execution through a selection of several thousand standard hydraulic schemes!

Thinking outside the box

is at the forefront of every product we develop. The Research, Development, Production, Quality Assurance and Administration departments are found at the St. Ulrich site, SOLARFOCUS employs people with a concern for the environment and the use of renewable energy.



St. Ulrich/Steyr (Austria)

THE PHILOSOPHY

Conscious sustainability

SOLARFOCUS is proud to work together to create a future in such a way that it serves mankind and simultaneously protects the environment.

Strong partners

Success requires strong partners. SOLARFOCUS passes on its comprehensive know-how directly to heating engineers and installers. This guarantees optimized planning of heating systems.

SOLARFOCUS brings together
what belongs together:
INNOVATIVE TECHNOLOGY +
ADVANCED MANUFACTURING





INNOVATION ECONOMY QUALITY

We at SOLARFOCUS develop, manufacture, and supply cutting edge green technology products and systems for thermal applications with our main products being:

Biomass heating
Solar systems
Heat pumps and
Fresh water modules

SOLARFOCUS is one step ahead: Thanks to ongoing research, development and cooperation with renowned research institutes and partners, we have registered dynamic corporate development. Our products are only available from specialist dealers across Europe. Ongoing training and seminars with our partners ensure that plant operators receive project- oriented advice and professional installation of plants.

AWARDS such as:

- Young Entrepreneur's Award
- Austrian Innovation Award 1995
- Golden "Pegasus" Business Award
- Nomination for National Award for Innovation
- Upper Austrian Environmental Protection Award
- "Energy Genie" Innovation Award 2003
- "Haustechnik Award" HVAC Award 2004
- "Energy Genie" Innovation Award 2011
- Italian innovation prize for energy-efficient technologies
- Polish Innovation Award „Złoty Medal" 2012&2013
- Slovenian Innovation Award 2014
- Best Business Award 2014
- UK Built It Award 2015
- "Energy Genie" Innovation Award 2016

and many more confirm our philosophy.



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

Quality made in Austria

- ✓ Biomass heating
- ✓ Solar systems
- ✓ Heat pumps
- ✓ Fresh water technology



Products for



Pellets



Pellets + log wood



Log wood



Wood chips



Solar energy



Fresh water



Heat Pump

Your specialised dealer

Austria

SOLARFOCUS GmbH, Werkstraße 1, 4451 St. Ulrich/Steyr

e-mail: office@solarfocus.at Tel.: +43 (0) 7252 / 50 002 - 0

web: www.solarfocus.com Fax: +43 (0) 7252 / 50 002 - 10