SOLARFOCUS

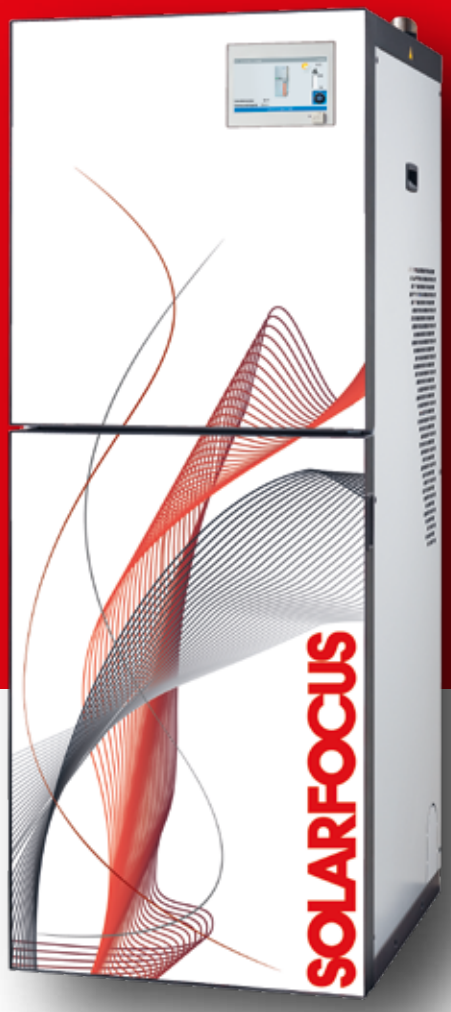
Biomass heating | Heat pumps | Solar energy systems

ecoTOP zero 15 - 24 kW

Pellet boiler

REMOTE ACCESS AND ASSISTANCE - HDX

Compatible with SOLARFOCUS CONNECT



Zero Emission Technology

- Compact dimensions 65 x 60 cm
- Return booster integrated
- Zero Emission Technology

5 YEARS SYSTEM GUARANTEE

In a nutshell

- Option to integrate an electrostatic dust collector to keep dust emissions at the measurable limit (< 1.0 mg/Nm³ 13% O_2)
- Innovative downfiring combustion technology enables ultra-clean combustion, with CO emissions < 9 mg/Nm³ 13% O_2 when operating at full load
- CO_2-neutral, environmentally friendly heating technology. Burning wood produces no more carbon dioxide (CO_2) than a tree absorbs from the atmosphere as it grows – biomass is stored solar energy
- Weather forecast control factors in the local weather forecast and among other things automatically reduces the heating temperature if sunny weather is expected. An easy way to save money!
- 7" touch display with integrated Modbus interface

Cleaner air with Zero Emission Technology

Product video

5-year system warranty

There's more to a truly efficient heating system than just a powerful pellet boiler – all system components have to work together perfectly to ensure safe, reliable and economic operation.
So SOLARFOCUS grants a 5-year system warranty for all registered and regularly maintained systems. This warranty covers all components supplied by SOLARFOCUS to give you maximum operational safety and to ensure your investment pays off.

5 YEARS SYSTEM GUARANTEE

Key features of the ecoTOPzero

Induced draft fan

The combustion air sucked in is regulated by the ID fan. The efficient external rotor motor has stainless steel fan vanes and speed monitoring, produces little noise and requires no maintenance.

The flue gas connection can be rotated and the outlet can either be at the top or at the rear, so the boiler can be installed flush to the wall on two sides.

Zero Emission Technology

The electrostatic dust collector can be integrated into the boiler – it's integrated as standard into the ecoTOPzero. The discharge electrode ionises the ultra-fine dust particles so that they stick to the collector surface. The high separation rate of 85% keeps dust emissions below the measurable limit of < 1.0 mg/Nm³.

Automatic heat exchanger cleaning

A turbulator rotates at regular preset intervals to clean the wall of the heat exchanger. An increase in the flue gas temperature reduces efficiency, and a clean heat exchanger saves fuel.

Uniform efficiency saves energy costs, and there's no need for any subsequent cleaning by hand. Plus, it's maintenance-free.

Automatic ash extraction

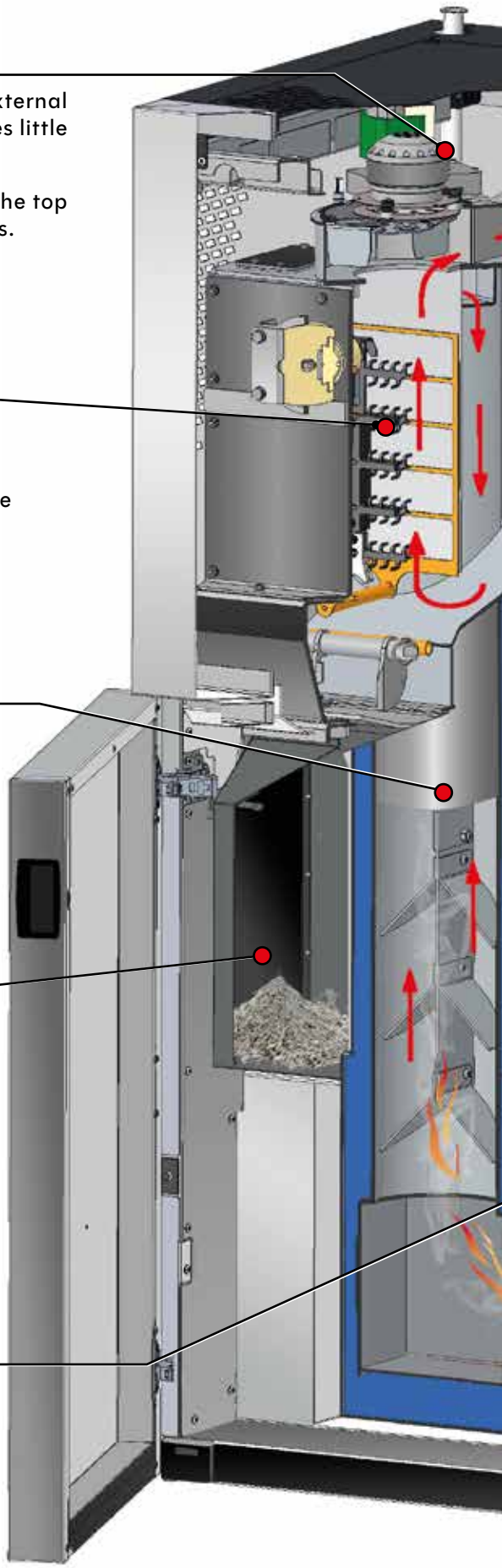
Most of the ash is automatically transported into a 20 litre ash container, and the ash filtered from the dust collector is also removed into the same container. The supplied ash drawer is a simple, manual way to keep the combustion chamber fully clean.

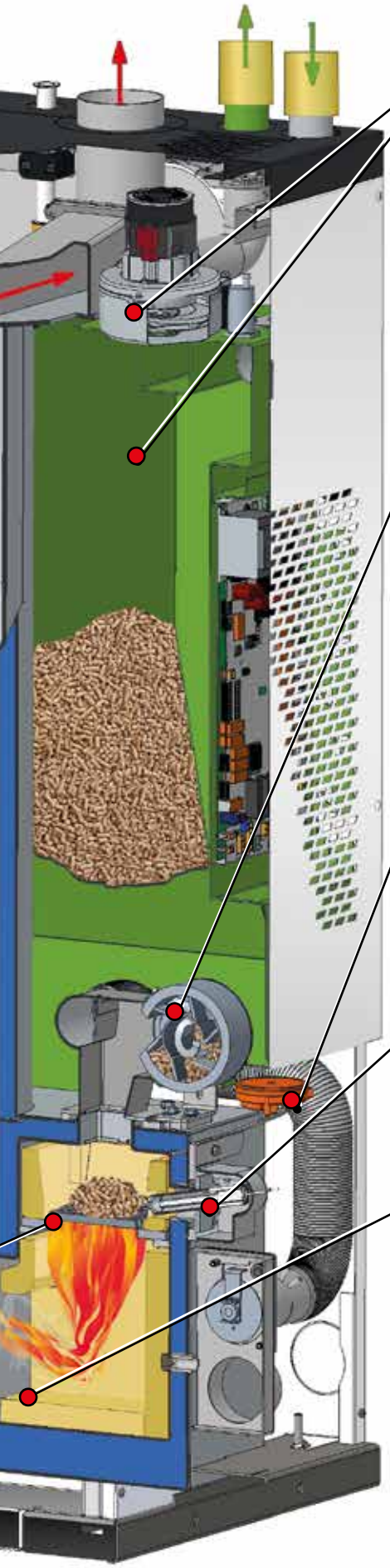
Long intervals between emptying mean your heating system is easy to maintain – you can even get your phone to alert you when the ash container needs to be emptied.

Stainless steel combustion grate

The pellets fall from above through the single axis rotary valve onto the stainless steel combustion grate.

This avoids damaging the fire bed and means the ash and the embers don't get mixed together, resulting in maximum efficiency and ultra-low emissions.





Intermediate pellet store with suction turbine

The boiler has a large intermediate pellet store, while the suction turbine enables filling of the intermediate container within pre-set times in a closed circuit.

The boiler room and pellet storage area don't have to be directly adjacent to each other. The suction turbine is attached to the intermediate pellet store.

Single axis rotary valve

The single axis rotary valve transports the pellets from the intermediate store to the combustion chamber while ensuring that the combustion chamber is sealed off from the intermediate store. There is a six-chamber system – in one axis to the feed auger with a directly flanged, maintenance-free geared motor.

It's 100% burn-back-proof even in the event of a power failure, with minimum power consumption and no chains or gear wheels – so it's quiet and requires no maintenance.

Air volume measurement

A differential pressure sensor can be used to accurately measure and control the volume of air fed into the combustion chamber.

The downfiring combustion technology, air volume measurement and lambda sensor combine to produce exceptionally clean combustion. This is combustion technology par excellence!

Automatic ignition

The pellets are ignited automatically by a highly heat-resistant ceramic glow pencil.

The glow pencil only needs 260 watts, produces no noise and requires no maintenance.

Wood gasification technology

The wood gasification technology/downfiring combustion technology automatically transports the ash downwards into the ash/combustion chamber. As a result, there are no moving parts in the hot zone.

In other systems, such as underfeed and case stage systems, the ash has to be removed mechanically via a complex mechanism (e.g. a turning/tilting/rolling grate).

Integrated return flow boosting

The return flow booster module with mixer motor and pump for buffer tank charging is already integrated. All hydraulic connections are easily accessible at the top of the boiler.

Innovative technical solutions

Wood gasification technology

The innovative **downfiring combustion technology** – also known as **wood gasification technology** – controls the combustion downwards. New pellets fall from the top onto the cooler fuel bed, which preserves the hot fire bed and is an effective way to prevent the embers and the ash from mixing.

The wood gas this produces is extracted through the stainless steel combustion grate and burned with a flame tip temperature of approximately **1,200°C** in the combustion chamber below. This ensures that every last flammable bit of residue in the ash is completely combusted.

- Ultra-high efficiency thanks to full and clean combustion
- Noticeably lower fuel consumption

Lambda sensor

We have used Lambda technology, which guarantees energy-efficient combustion by adjusting to the fuel used, since 1981.

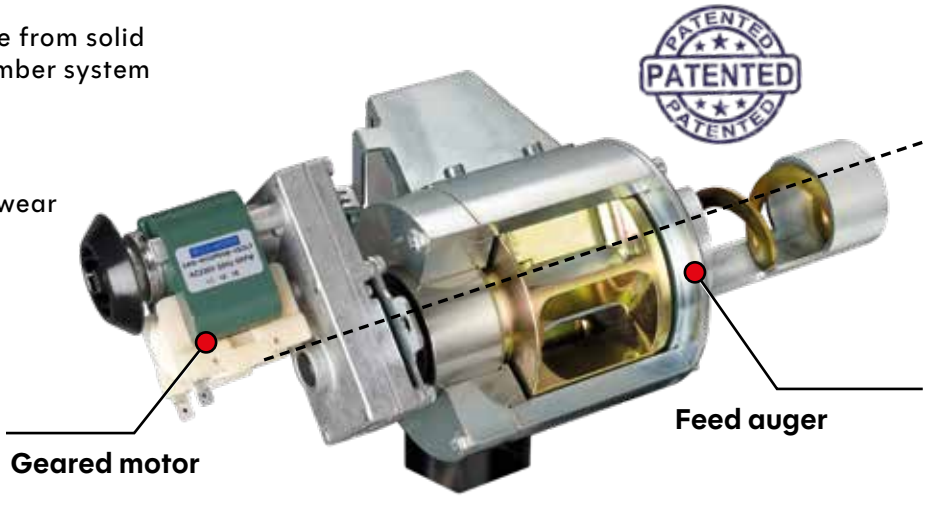
- Experienced with lambda sensors since 1981
- Clean combustion with minimal dust emission

Single axis rotary valve

The **single axis rotary valve** ensures that the pellets are transported reliably and accurately from the intermediate store to the stainless steel combustion grate. Made from solid materials, it meets every demand when it comes to dimensional accuracy and durability. The **innovative six-chamber system** provides 100% burn-back protection at all times, giving you maximum peace of mind when using the system.

Another benefit is that the feed auger, single axis rotary valve and geared motor are combined on a common axis – this clever, patented design saves space, makes the system more efficient and reduces the required maintenance to a minimum.

- High-quality manufacturing made from solid materials and innovative six-chamber system guarantee 100% burn-back protection
- No chains and gears, which increases reliability and reduces wear

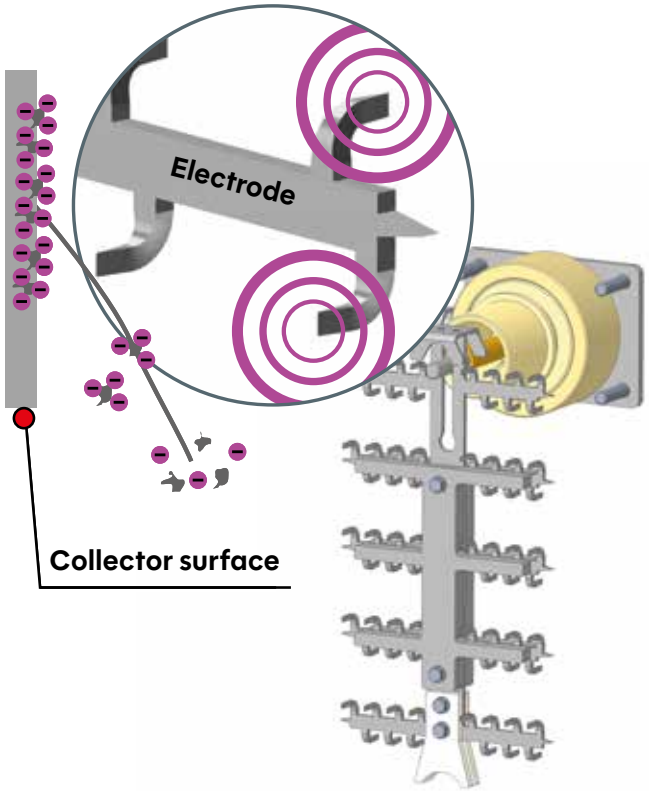


Zero Emission Technology

The **ecoTOPzero** comes as standard with an electrostatic dust collector which removes even the finest dust particles from the flue gas. A **high voltage of up to 30 kV** ionises the particles, which then gather on the collector surface.

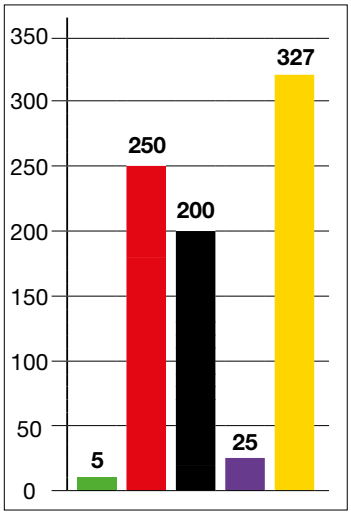
The **ecoTOPlight** is supplied without a particle filter, but it's easy to retrofit one at any time. This gives you flexibility and ensures you're well prepared for more stringent environmental regulations in future.

- Dust emissions at detection limit
- Flexibility to be retrofitted and upgraded at any time
- Clean, sustainable and future-proof



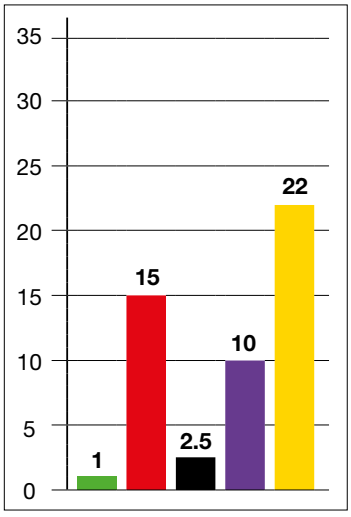
Carbon monoxide

(mg/Nm³) based on 13% O_2



Dust

(mg/Nm³) based on 13% O_2



Emissions at nominal load

The innovative downfiring combustion technology and the Zero Emission Technology combine to enable exceptionally clean combustion.

The charts on the left show the measured emissions from the **ecoTOPzero 15** in comparison with the applicable national limits for CO and dust emissions – displaying in impressive fashion how far below the limits the emissions from the system are.

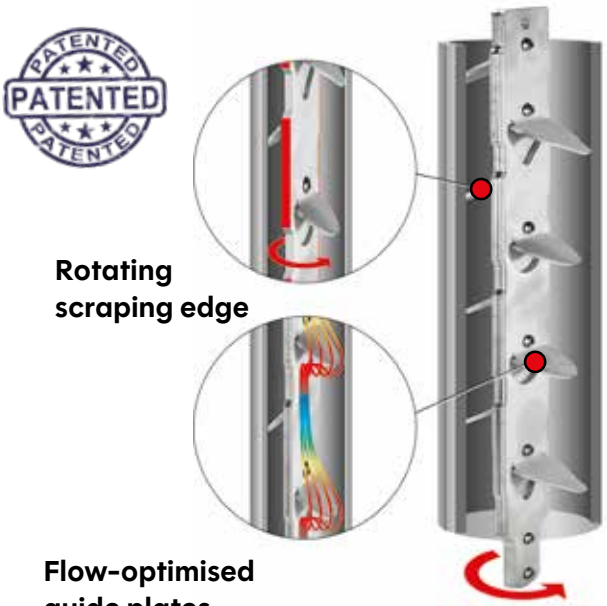
- SOLARFOCUS **ecoTOP**zero 15
- UZ37:2025 Austria
- BAFA Germany < 2.5 mg
- Italian directive 5 stars
- Flamme Verte in France

Automatic heat exchanger cleaning

The patented turbulators ensure your system always works as efficiently as it should. The rotating scraping edge cleans the heat exchanger surface so thoroughly that no additional manual cleaning is required.

Flow-optimised guide plates improve heat transfer, which reduces low flue gas temperatures and optimises the energy yield.

- Consistently high efficiency
- Less maintenance and lower running costs
- Reliable protection against deposits and loss of performance



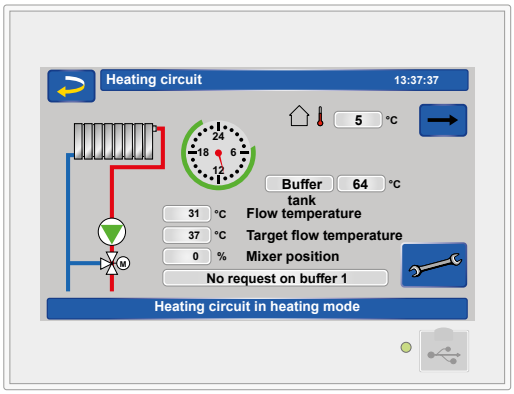
Controller for the entire heating system

- Intuitive control unit with 7" touch display
- Takes the weather forecast into account
- All controlled via a screen

Easy operation of the entire heating system

With ecomanager-touch, SOLARFOCUS offers an intuitive and ultra-convenient touchscreen control system. This state-of-the-art control system simplifies operation via the touchscreen – not just for the boiler, but for the entire heating system.

It makes it easy to integrate all SOLARFOCUS products within a heating network and to coordinate them to create a heating system where each product works in harmony with the others.



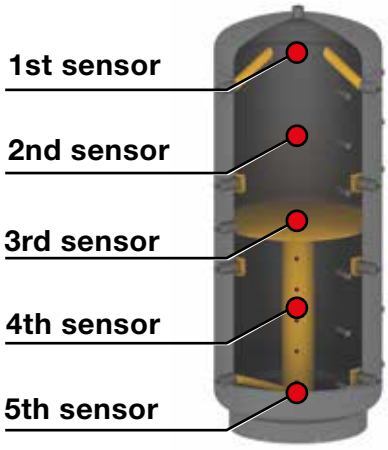
Buffer tank management

All sensors and functions for controlling a buffer tank are already included as standard. Depending on the system layout, up to 4 buffer tanks can be integrated into the control system. Multi-sensor buffer tank management is available for larger buffer tank sizes or for cascade control.

Multi-sensor buffer tank management

The multi-sensor buffer tank management option gives you up to five sensors distributed at various heights in the buffer tank, rather than the conventional two temperature sensors. The individual sensor values can be used to determine the charge status of the buffer tank.

This option is particularly helpful for cascade systems, as varying loads can be detected sooner and the boiler output can be adjusted more quickly – which increases the boiler runtimes and reduces the start/stop intervals, increasing the efficiency of the overall system.



Weather-guided heating circuit

All sensors and functions for controlling a mixer-controlled heating circuit are already included as standard. Different time windows, holiday programmes or drops in temperature can be set individually. Up to 8 mixer-controlled heating circuits can be integrated into the control system. Each heating circuit can be extended with a room temperature sensor or controller. Versions with a radio or cable connection are available.

Hot water preparation

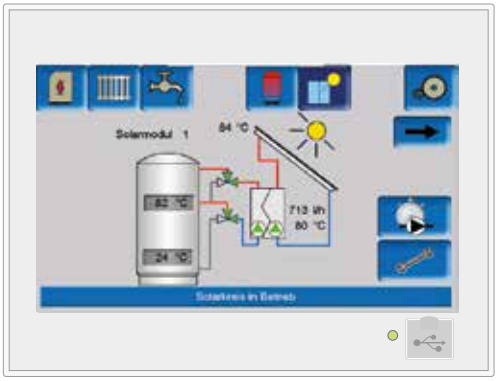
All sensors and functions for controlling a hot water tank or a fresh water module are already included as standard. Up to 4 hot water tanks/combination tanks or 4 fresh water modules can be integrated into the control system.

Circulation pumps with different programmes (flow impulse, time, temperature) can also be controlled for all versions. Alternatively, circulation can also be triggered via Modbus using a motion sensor, for example.

Solar thermal system

SOLARFOCUS offers complete flexibility when integrating the optional solar thermal system, with 3-circuit solar energy systems available in addition to the usual 1-circuit or 2-circuit systems with one or two buffer tanks.

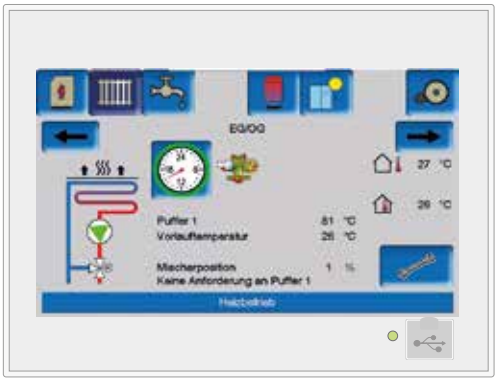
And a SOLARFOCUS stratified charging module, pool heating and multiple collector arrays can also be integrated. Plus, the ecomanager-touch control system has additional features such as a heat dissipation function, a start-up function, relative priority and the innovative weather forecast function.



Weather forecast control

Built in as standard, the weather forecast control reaches its full potential when used in conjunction with a solar thermal system. It uses up-to-the-minute live data and weather forecasts for the saved location to decide whether to wait for the free solar yield for a set period of time or whether to start the boiler immediately in the event of bad weather and temperatures.

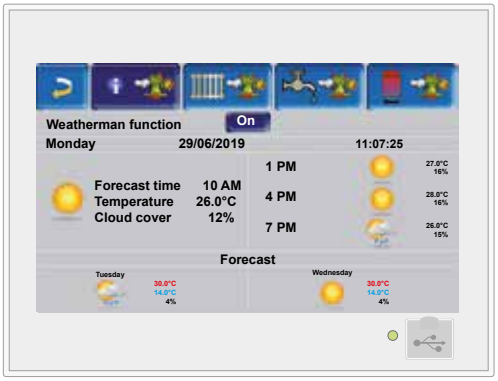
This gives the solar thermal system more time to supply additional energy to the buffer tank. But even without a solar energy system, this smart feature can save you money: when the sun is shining, the flow temperature is automatically reduced to prevent overheating of living areas.
This saves you a noticeable amount of money and makes your home more comfortable all year round.



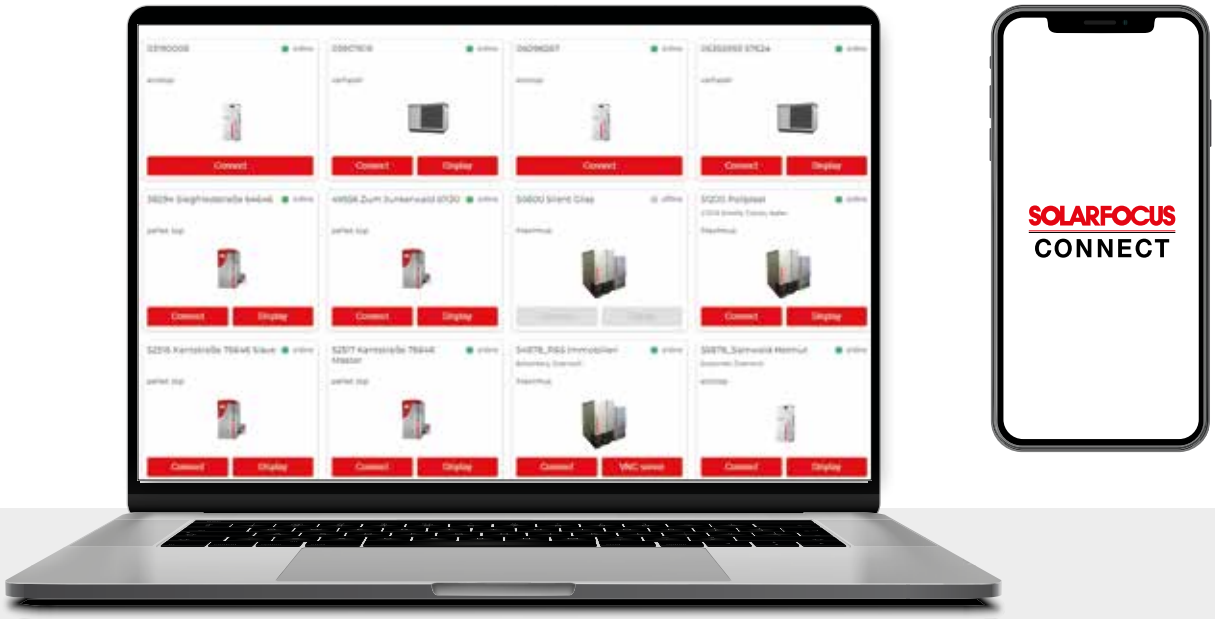
Additional control features

As well as the standard features, additional functions are available:

- Excess PV current control for up to 3 electric heating elements
- Dual-circuit temperature difference charge control
- External boiler integration for oil-fired boilers, gas boilers, heat pumps or wood-burning stoves
- Remote control with mixer for heat distribution across multiple buildings
- Cascade control of multiple SOLARFOCUS heat generators
- Room air module to control combustion air supply



Smart home integration



SOLARFOCUS Connect

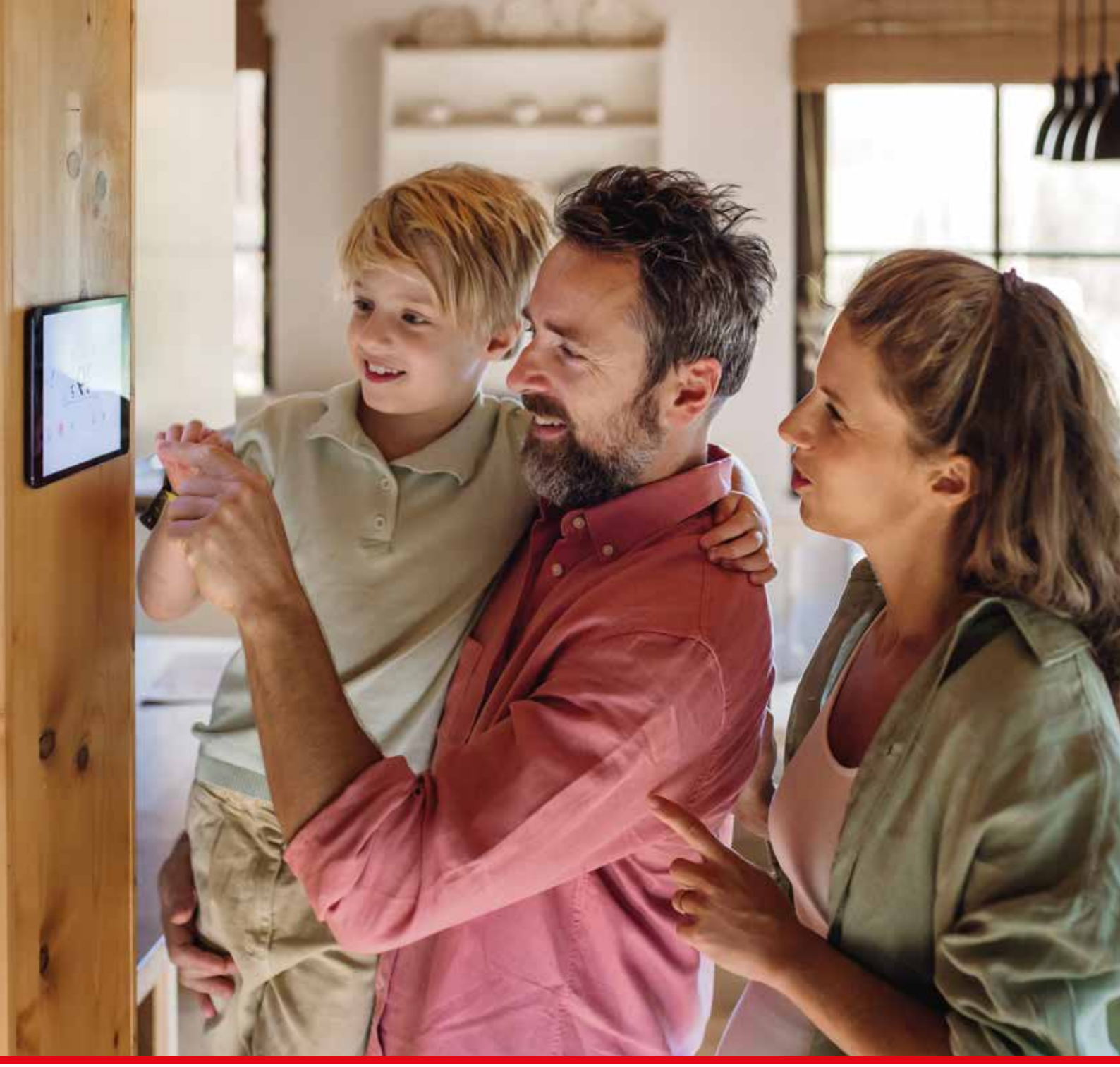
Is a fee-based platform that provides the customer with full remote access to the ecomanager-touch via VNC. With SOLARFOCUS Connect, you can see your pellet boiler display on your smartphone, tablet or PC as if you were standing right in front of it. The connection runs in a secure VPN channel so that only authorised users have access to it.

If you have any questions for the heating engineer in charge or a SOLARFOCUS technician, you can grant them temporary access to the controller. This means that questions or settings can be explained live on the display. And it also enables more targeted, faster remote diagnoses in order to provide you with better assistance.

mySOLARFOCUS

The free mySOLARFOCUS app allows you to control the most important functions of your heating system remotely. For example, you can select different operating modes (holiday mode, automatic mode or reduced mode) of the heating circuits and you can control the temperatures of the hot water and buffer tanks. The current status line of the heat generator is also displayed.

If a PV system with a Fronius, SolarEdge or Huawei inverter and a corresponding energy meter are installed, the current energy balance as well as the daily consumption of the heat pump can be clearly displayed. Push notifications to your smartphone give you important information. It's quick and easy to set up the app on your smartphone, and it's available for Android and iOS.



All SOLARFOCUS heaters have a LAN and a Modbus TCP interface as standard. This makes it easy to integrate the boiler into a network and control it remotely via PC, tablet or smartphone.

LOXONE

SOLARFOCUS products also communicate with the LOXONE smart home control system using an integrated Modbus TCP interface. No additional SOLARFOCUS extensions are required for the connection to the miniserver.

KNX

The ecomanager-touch can be connected to a KNX control system using a converter from KNX to Modbus TCP. The converter required for this is available from your trusted KNX partner.

Free energy with photovoltaics and solar heat

Photovoltaics

The ecotop pellet boiler – the clever way to use excess PV current

The **ecotop pellet boiler** makes your photovoltaic system even more efficient: In conjunction with the optional **EM24 energy meter**, it allows the excess PV current – which would otherwise be fed into the grid – to be used to generate heat.

Two smart solutions for using your own electricity:

1. Buffer tank with e³ technology from SOLARFOCUS
Use up to three electric heating elements in a hygiene combination tank or stratified buffer tank to benefit from your excess PV electricity. The optional **e³ excess control** enables continuously adjustable control of the three heating elements at up to 9 kW, giving you maximum flexibility and efficiency.

e³ technology: Install up to 3 electric heating elements

2. hydroPELL system buffer with power-to-heat
An innovative solution with a continuously adjustable 9 kW heating element in a separate heating circuit, and an intelligent control system which heats the water in the bypass until it reaches the desired temperature before feeding it into the buffer tank in stages. This means even small amounts of excess PV energy are used efficiently.

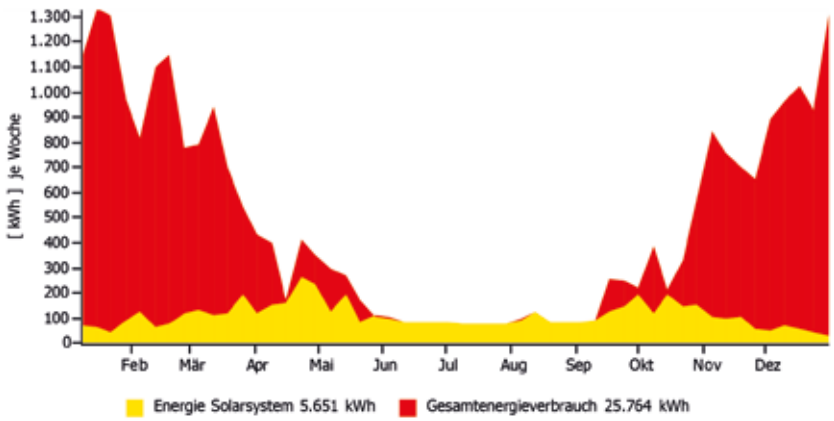
Power-to-Heat

Solar heat

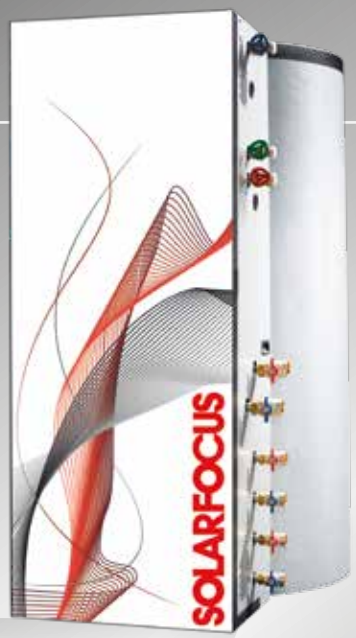
Thermal solar panels for hot water and heating

A solar heat system converts the sun's rays directly into thermal energy that you can use to heat your water and boost your heating system. It connects to the system using a solar coil installed in the buffer tank itself.

Depending on the orientation, size and type of integration into the existing heating system, you could cut your heating bills by up to 20%.



hydroPELL system buffer tank



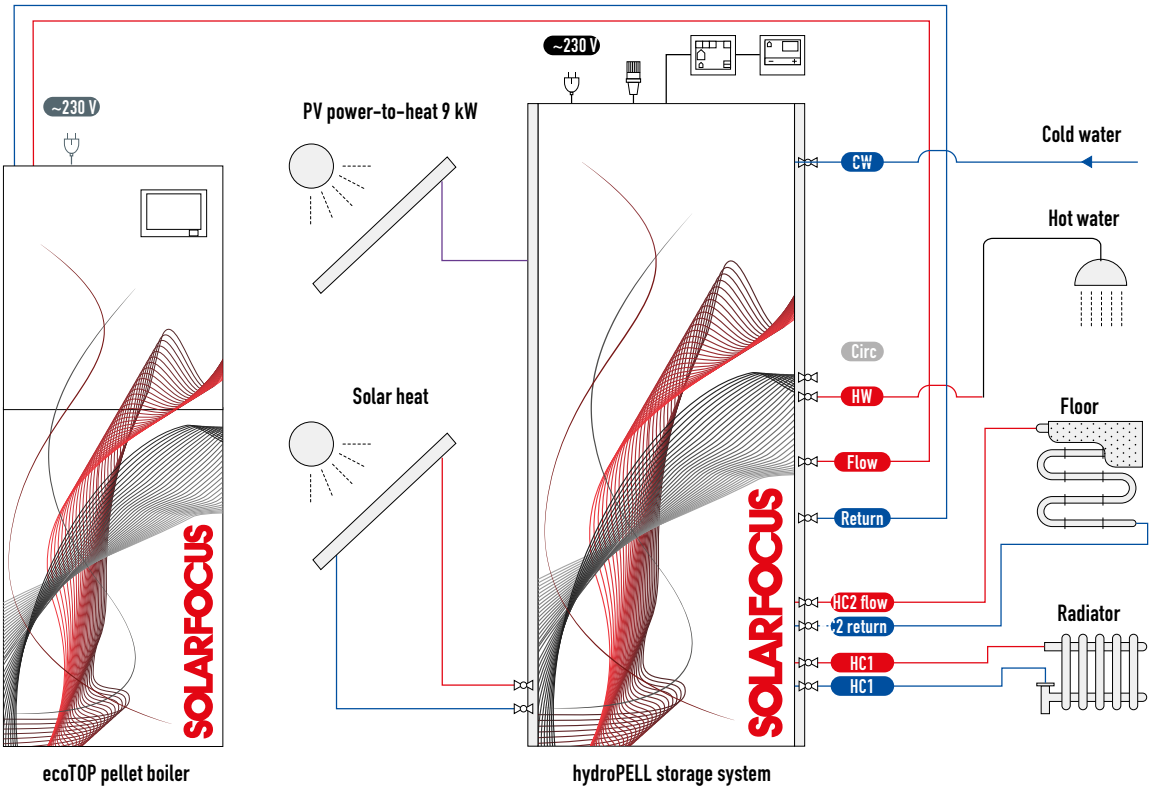
The key benefits

- Stratified buffer tank with integrated solar coil and hydraulic unit
- Power-to-heat capability – ideal for using excess PV current
- Fresh water station for hygienic hot water with no risk of legionella
- Two heating circuits can be integrated directly
- Insulated stainless steel pipework, pumps and valves are pre-fitted and connected electrically
- Compact, visually appealing design

Everything you need – in the smallest space with the highest quality

The hydroPELL is an intelligent 800 litre stratified buffer tank with an integrated 2.4 m² solar coil and a compact hydraulic unit. It comes with the pipework, pumps and valves pre-fitted, connected electrically and fully insulated, which saves you time in installation and reduces the risk of mistakes when wiring the connections. So the hydroPELL is an ultra-efficient, convenient and hygienic way to prepare hot water – ideal for complex heating systems.

HEATING + HOT WATER + SOLAR HEAT + PV POWER-TO-HEAT



ecoTOP pellet boiler

hydroPELL storage system

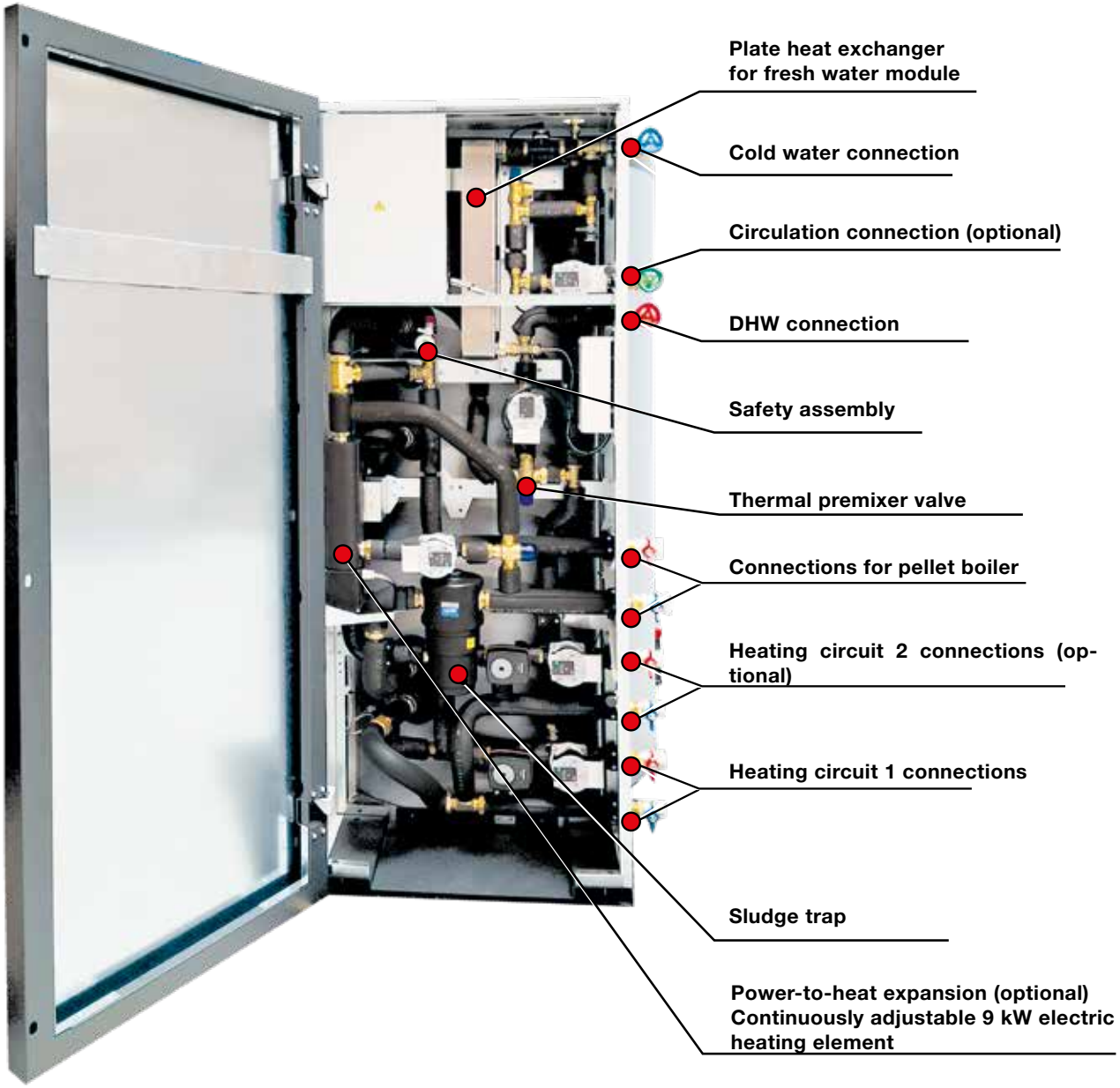
The technology in detail

The hydroPELL requires little work to install once it's delivered: the **stainless steel pipework** is fully insulated, all pumps and valves are pre-fitted and connected electrically, and the ball valves, a dirt and sludge trap and the complete boiler safety assembly are all included as standard.

It comes in three sections, which makes installation easier even where space is limited. The clever design makes it quick and easy to replace components such as the pumps, which saves time in servicing and maintenance.

The integrated stratified buffer tank has a solar coil for connecting a **solar thermal system** and a **power-to-heat option** for using **excess PV current**. This means the hydroPELL is ideally equipped for all kinds of modern energy generation.

There are also **three additional sleeves on the back**, which enable simple integration of additional heat generators such as a heat pump, wood-burning stove, oil-fired boiler or gas boiler.



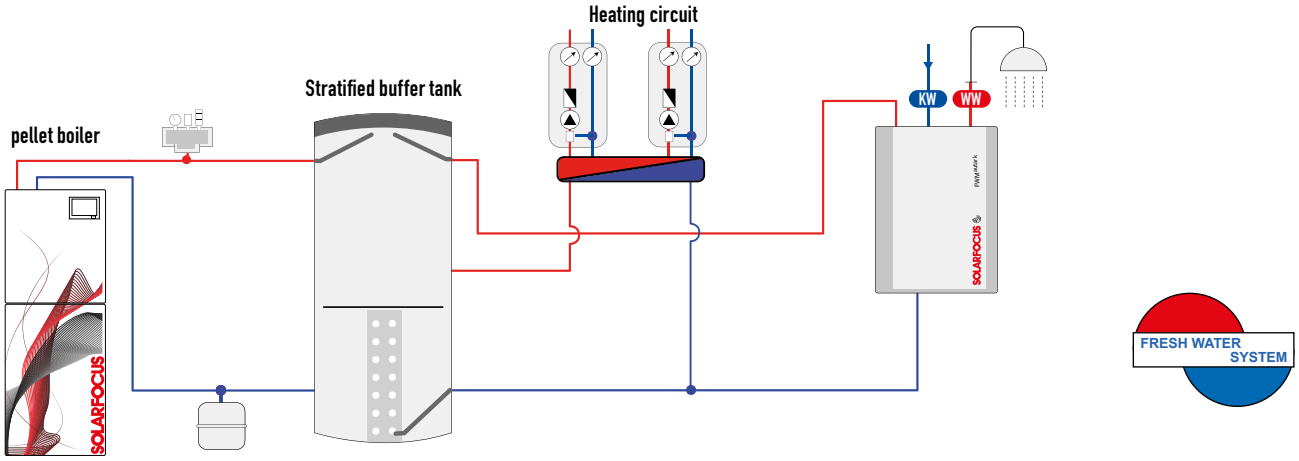
The **integrated fresh water station** supplies hygienic hot water without the risk of legionella.

Up to **two heating circuits** can be connected directly, or the second heating circuit can be used as an empty pipe to allow an external manifold bar to be connected.

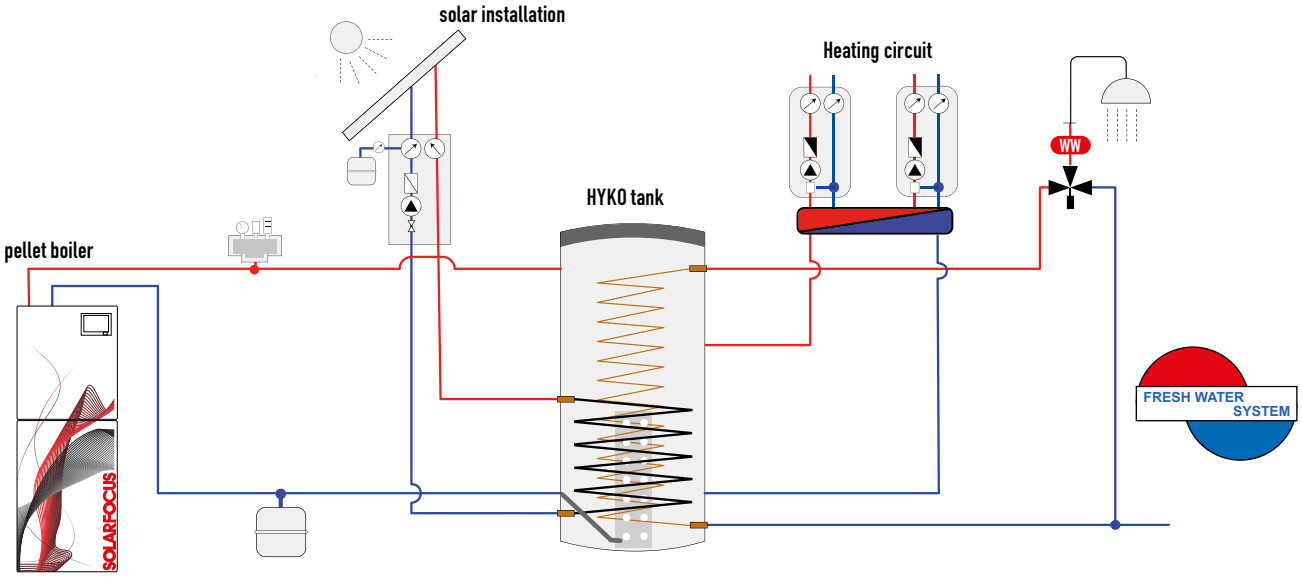
Another benefit is the high-quality tank insulation, which meets the **energy efficiency class B** standard – when other systems on the market only meet class C – and is an effective way to reduce heat loss.

Additional hydraulic connections

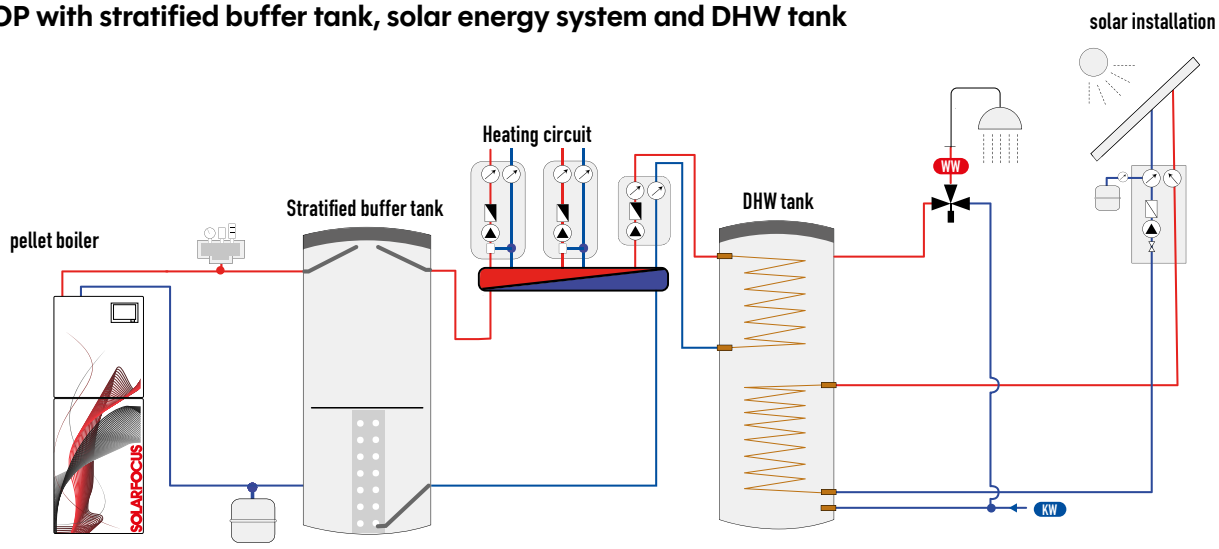
ecoTOP with stratified buffer tank and fresh water module FWM



ecoTOP with hygiene combination tank and solar energy system



ecoTOP with stratified buffer tank, solar energy system and DHW tank



Benefits of a buffer tank

- Like other boilers, pellet boilers benefit from installing a buffer tank
- The best way to adapt to the required heat load
- Keep boiler start-ups to a minimum, extending the service life of your boiler
- Perfect for combining with solar energy systems and other heat sources

Pellet storage and conveying systems

Suction heads with diverter for suction heads
The system can switch manually or automatically between the individual suction heads. The advantage of suction heads is that the storage area can be set up very easily, even in irregularly shaped spaces.
The smaller the distance between the individual suction heads, the better the utilisation ratio of the storage area. Depending on the size of the storage area, emptying can be optimised by installing sloping panels at the sides.

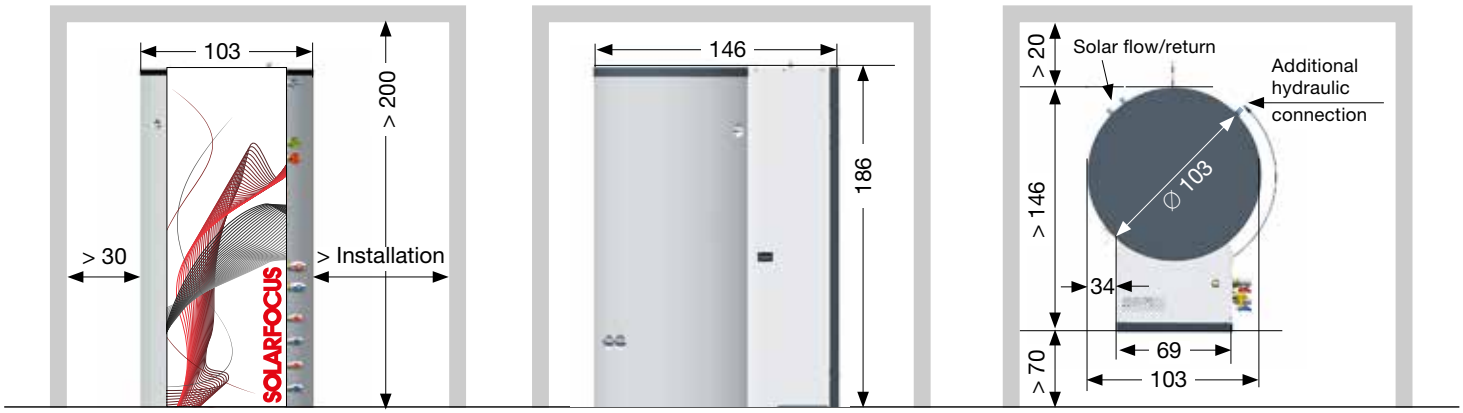
Suction auger
The suction system with auger extraction is ideal for large, rectangular shaped areas. Installing a sloping floor allows the storage area to be fully emptied.
The auger can be between 2 and 6 metres long and should be installed longitudinally in the storage area. At the end of the auger, the pellets are conventionally transported to the boiler using a suction system.

Pellet box with suction system
The pellet box is a ready-made storage solution which is ideal for positioning in a cellar. Pellets are removed using a suction head or a small auger. The pellet box is more expensive than creating your own storage area with suction heads.

Dimensions and data for pellet box – Speed

		17		21		25		21/25		29		17/29		21/29		25/29	
Length (L)	[mm]	1,700		2,100		2,500		2,100		2,900		1,700		2,100		2,500	
Width (W)	[mm]	1,700		2,100		2,500		2,500		2,900		2,900		2,900		2,900	
Height (H) adjustable in 100 mm increments	[mm]	1,800 - 2,500								1,900 - 2,500							
Storage capacity when		m^3	to	m^3	to	m^3	to	m^3	to	m^3	to	m^3	to	m^3	to	m^3	to
H = 1,800 mm		3.2	2.1	4.4	2.8	6.4	4.2	5.2	3.4	-	-	-	-	-	-	-	-
H = 1,900 mm		3.5	2.3	4.9	3.1	7.0	4.6	5.8	3.77	9.4	6.1	5.6	3.6	6.6	4.3	7.7	5
H = 2,100 mm		4.1	2.7	5.8	3.7	8.3	5.4	6.9	4.51	11.0	7.1	6.5	4.2	7.8	5.1	8.9	5.8
H = 2,500 mm		5.4	3.5	7.7	5.0	10.9	7.0	9.2	6.0	14.1	9.2	8.3	5.4	10.2	6.6	11.4	7.4

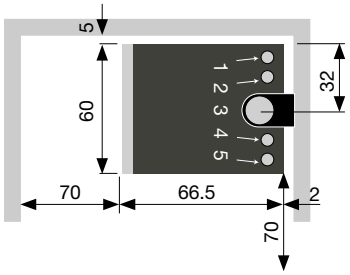
hydroPELL technical specifications



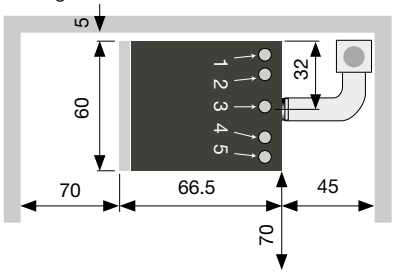
HydroPELL storage system		
Buffer capacity	[l]	800
Solar coil	[m²]	2.4
Energy efficiency class of insulation		B
Right-side boiler connections		5/4" IT
Dimensions		
Total width	[cm]	103
Total height	[cm]	186
Total depth	[cm]	146
Buffer tank diameter without insulation	[cm]	79
Buffer tank diameter with insulation	[cm]	103
Buffer tank height when tilted	[cm]	174
Tower height when tilted	[cm]	190
Weight		
Buffer tank weight when empty without insulation	[kg]	130
Tower weight	[kg]	100
Fresh water module		
Fresh water module output capacity @ 60°C buffer supply	[l/min]	30
Right-side fresh water module connections		1" ET
Thermal premixer valve		Integrated
Circulation		Optional
Circulation nominal auger height	[m]	7
Circulation pump for circulation		Wilo Para Z BZ15-130/7-50/SC-12
Heating circuit		
Circulation pump for heating circuit		Wilo Para G15-130/6-SC
Mixer valve	[kVs]	6.3
Max. mass flow	[m³/h]	3.2
Nominal auger height	[m]	6
Max. number of integrated heating circuits		2
Heating circuit connections	["]	IT 1
Centre distance	[mm]	125
Power-to-heat (optional)		
Max. electrical output of electric heating element	[kW]	9
Electric heating element control		Continuously adjustable
Settable temperature for bypass line opening		50 - 85°C

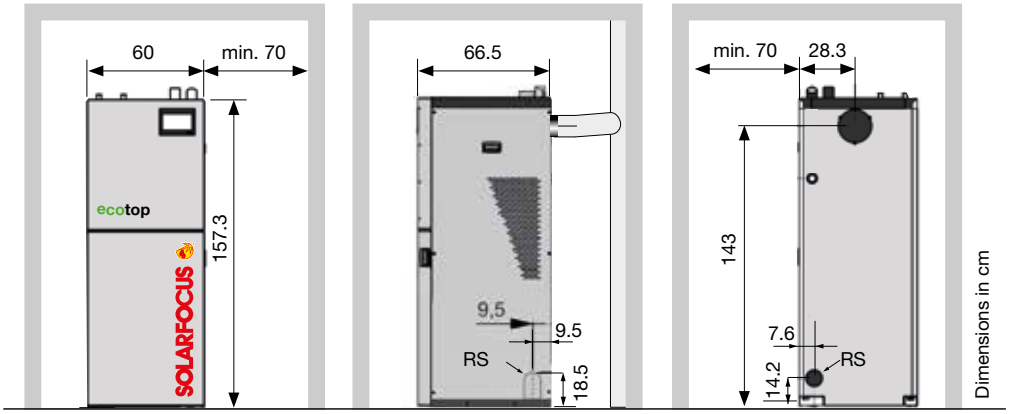
ecoTOP technical specifications

Flue gas connection at top



Flue gas connection at rear





1) Return 1" UN, 2) Flow 1" UN, 3) Flue gas connection, 4) Pellet return air, 5) Pellet suction air

ecoTOP pellet boiler		15	20	24
Power range	[kW]	4.6 - 15.4	5.9 - 19.7	7.2 - 24
Energy efficiency class product label		A+	A+	A+
Energy efficiency class composite label (with control) for ecotoplight		A+	A+	A++
Energy efficiency class composite label (with control) for ecotopzero		A++	A++	A++
Boiler class according to EN 303-5:2012		5	5	5
Dimensions				
Total width	[cm]	60	60	60
Total height	[cm]	66.5	66.5	66.5
Height incl. adjustable feet (without connections)*	[cm]	157	157	157
Minimum room height	[cm]	185	185	185
Flue gas side				
Flue gas pipe DM**	[cm]	10 / 13	10 / 13	10 / 13
Height at centre of flue gas pipe*	[cm]	143	143	143
Flue gas mass flow full load	[g/s]	9 / 10	12 / 12.5	15 / 15
Flue gas mass flow partial load	[g/s]	3 / 4	4 / 4.5	5 / 5
Maximum flue gas temperature with full load	[°C]	140	140	140
Maximum flue gas temperature with partial load	[°C]	100	100	100
Maximum draught requirement	[Pa]	5	5	5
Condensation		No	No	No
Weight				
Weight	[kg]	280	280	280
Water side				
Water content	[l]	55	55	55
Max. permissible operating pressure	[bar]	3	3	3
Boiler flow/boiler return connection	[" UN]	ET 1	ET 1	ET 1
Drain connection	["]	ET 1/2	ET 1/2	ET 1/2
Differential pressure at ΔT 10 K	[hPa]	145	245	345
Differential pressure at ΔT 20 K	[hPa]	35	60	85
Thermal overload protection	["]	Not required		
Electrical connection				
Power supply, fuse		230 V AC/50 Hz, 10 A		
Fuel				
Suitable fuel		Pellets EN ISO 17225-2, Class A1		
Capacity of ash container	[l]	20.3	20.3	20.3
Capacity of intermediate pellet store	[l]	55	55	55

* Adjustable feet at maximum depth of thread
** Flue gas pipe can be expanded from 10 to 13 cm using the supplied adapter.

SOLARFOCUS

Biomass heating | Heat pumps | Solar energy systems

Pellet boiler

pelletelegance:	10 to 24 kW
octoplus:	15 to 22 kW
ecotopzero:	15 to 24 kW
pellettop:	35 to 70 kW
ecopellzero:	50 to 120 kW
maximus:	150 to 300 kW

Dual fuel boiler for wood and pellets

therminator II dual fuel: 22 to 60 kW

Log wood boiler

therminator II SH: 18 to 60 kW

Wood chip boiler

ecohackzero:	30 to 120 kW
maximus:	150 to 250 kW

Air source heat pump

vampair PRO 08 - 10
vampair PRO 12 - 15
vampair PRO 20
vampair ECO 08 - 15

Solar energy system

CPC collector
Sunnyline
SUNeco

Photovoltaic system

PV modules
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