PLENTICORE & HEAT PUMP

SECTOR COUPLING
Heat pump

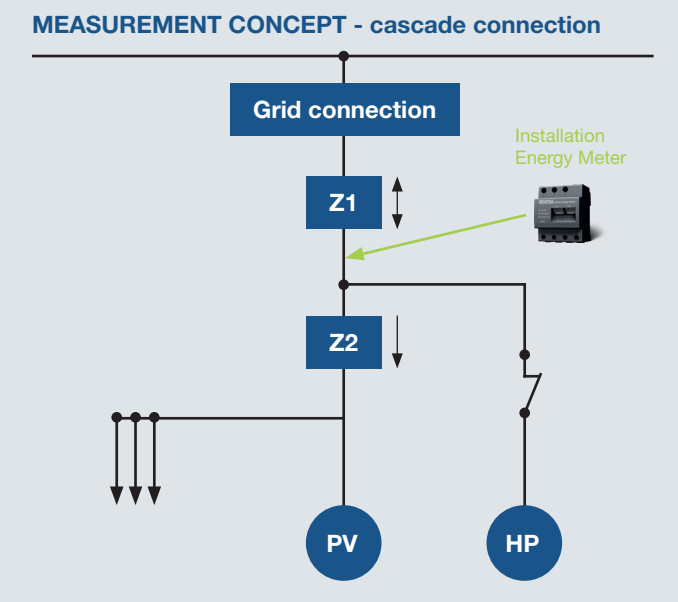
A wide range of options for connecting and operation of a heat pump

Heating your home with solar power - optimally controlled, you can save CO2 and money.

Heat pumps offer a sensible way to heat the house. The best way to do this is to use as much electricity as possible from your own solar system. Especially in the transitional periods, operation can be optimised through intelligent coupling. With the **second generation of PLENTICORE plus**, KOSTAL already offers all the relevant interfaces.

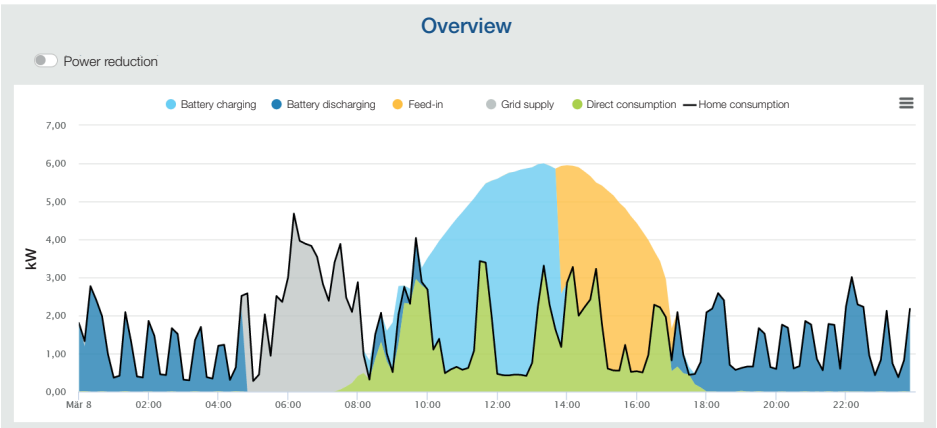
Option 1 - the „unregulated“ operation

The heat pump is already a little older? Even then, a lot of solar power can already be used by applying the appropriate metering concept. It is important to use a cascade metering concept if the heat pump is to be operated with a heat pump tariff. This is a sensible operating mode especially for existing systems, if there is no suitable control interface (e.g. SG-Ready) due to the age of the system.



Operating mode: The heat pump usually runs constantly day and night. Optimisation may be possible by adjusting the operating times, e.g. with post-setback. This reduces the efficiency of the heat pump (COP), but tends to use more electricity during times of solar production.

Tip: A battery storage system can additionally support operation during the night hours.



Self-sufficiency level:

Option 2 - Control via SG-Ready contact

The PLENTICORE has a total of 4 digital outputs for self-consumption control. The selection option via the web interface with preset parameters for the use of a switching contact with SG Ready function is particularly convenient. This means that the SG Ready requirements are fully implemented.

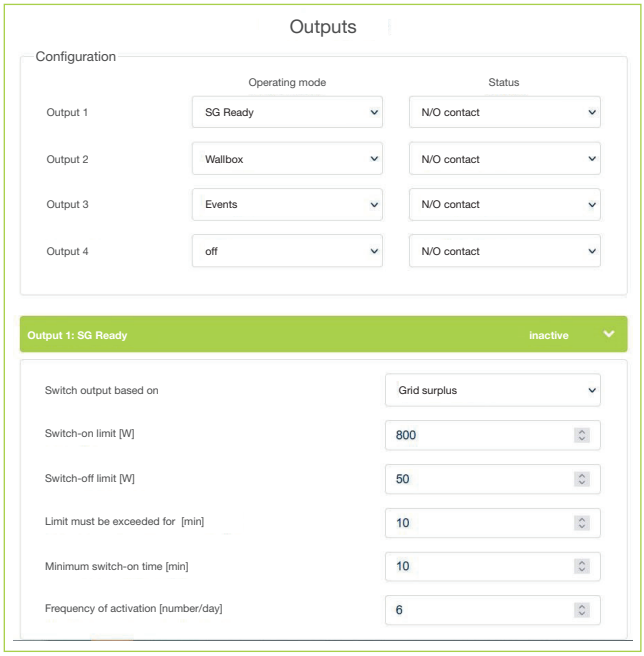
Effort: Slightly higher compared to option 1, as a switching cable for the SG Ready interface must be installed. In addition, knowledge for parameterisation and technical data of the heat pump configuration is required.

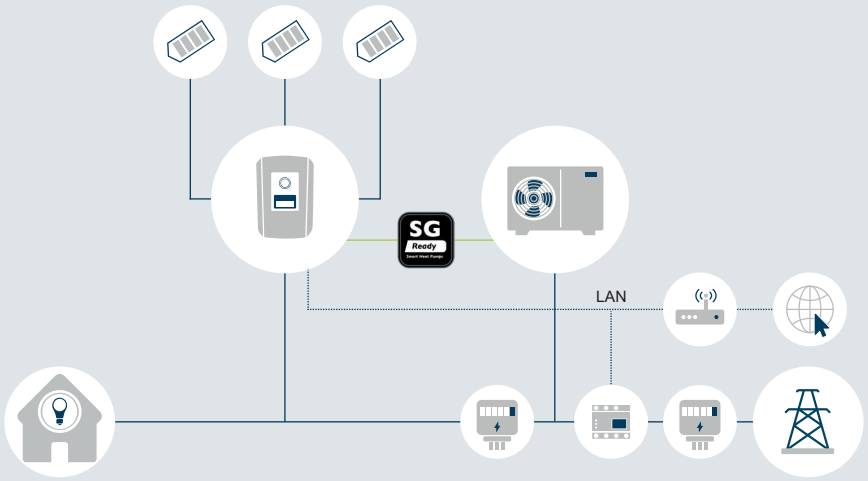
Operating mode: the heat pump usually runs in standard mode and can increase running times in times of solar surplus.

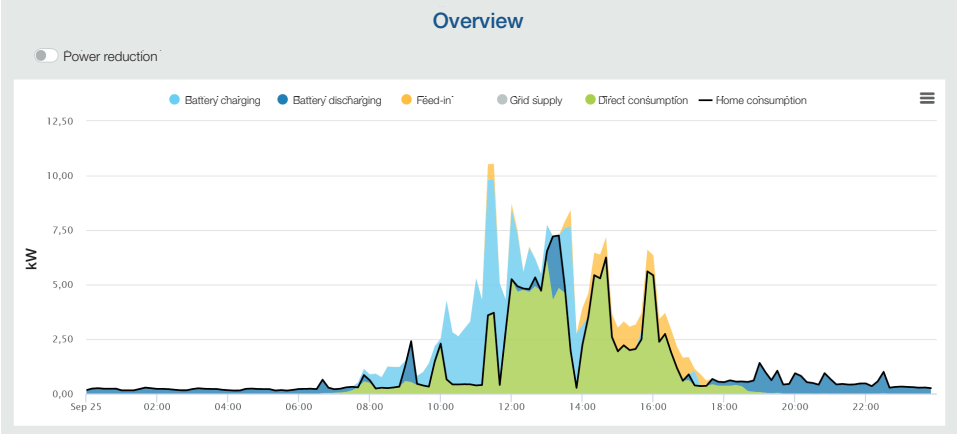
The illustration on the right shows how the SG-Ready parameterisations can be conveniently configured via the web interface of the PLENTICORE.

Good to know:
The „SG Ready“ label refers to the heat pump/series including the control technology used to control it, as well as interface-compatible system components.

Compatible series can be found under:
https://www.waermepumpe.de/normen-technik/sg-ready/sg-ready-datenbank/







Self-sufficiency level:

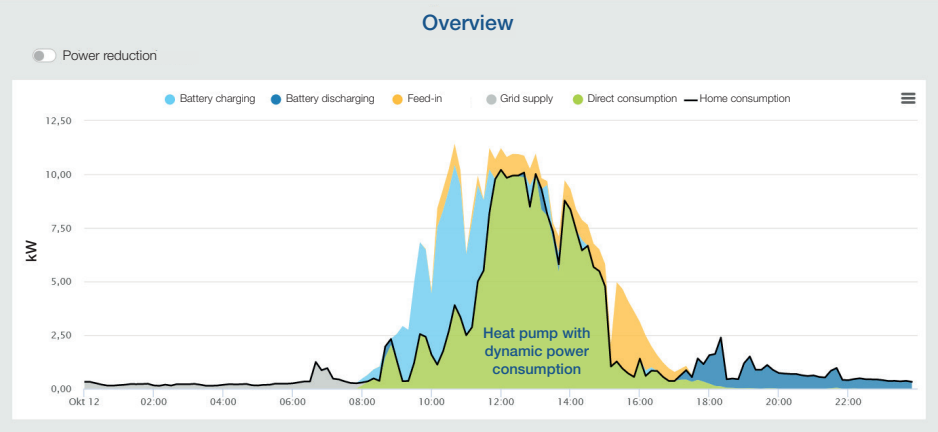
Option 3 - Communication via ModBus TCP

When **ModBus TCP** communication is activated (can be activated once via the web interface), the **PLENTICORE** provides information such as solar energy generation and surplus power at the grid connection point. Compatible heat pumps installed in the same home network can read this information and control the heat pump accordingly.

Important:
The **PLENTICORE** does not take over the control, but this is done independently by the heat pump. Modulating heat pumps can dynamically adjust their power consumption and thus ensure the greatest possible use of the self-generated energy. The following requirements must be met for this:

1. Integrate PLENTICORE and heat pump into the local network
2. Activate ModBus TCP in PLENTICORE
3. Add the IP address of the PLENTICORE or KOSTAL Smart Energy Meter in the heat pump
4. Heat pump takes data from the inverter and controls heating output

The following manufacturers of heat pumps are compatible with the **PLENTICORE** or the **KOSTAL Smart Energy Meter**: **Brunner, Nibe** and **Solvis**.



Self-sufficiency level:

The diagram above illustrates how the heat pump starts operating after the connected battery storage has been charged and regulates its power consumption downwards as the sun‘s position becomes lower. In the **KOSTAL Solar Portal**, the power consumption of the heat pump is recorded as part of the direct consumption via the **KOSTAL Smart Energy Meter** or the **KOSTAL Energy Meter**. As soon as the set temperature of the water storage tank is reached and the minimum power consumption exceeds the solar surplus, the heat pump switches off.

Effort: Slightly higher compared to option 1, as all components must be integrated into the local network.Knowledge of the parameterisation and technical data of the heat pump configuration is required. Depending on the manufacturer, the level of detail of the parameterisation options differs.

NOTE:
Pure hot water heat pumps are often also suitable for upgrading an existing gas or oil heating system in existing buildings. In this way, the hot water demand can be ensured throughout the year in a cost-effective and environmentally friendly manner - with self-generated solar power from your solar system with KOSTAL inverters. Alternatively, hot water generation can also be supported conventionally by means of dynamically controlling heating rods (e.g. from myPV).

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Subject to changes