

Emergency power

in the S10 home power station



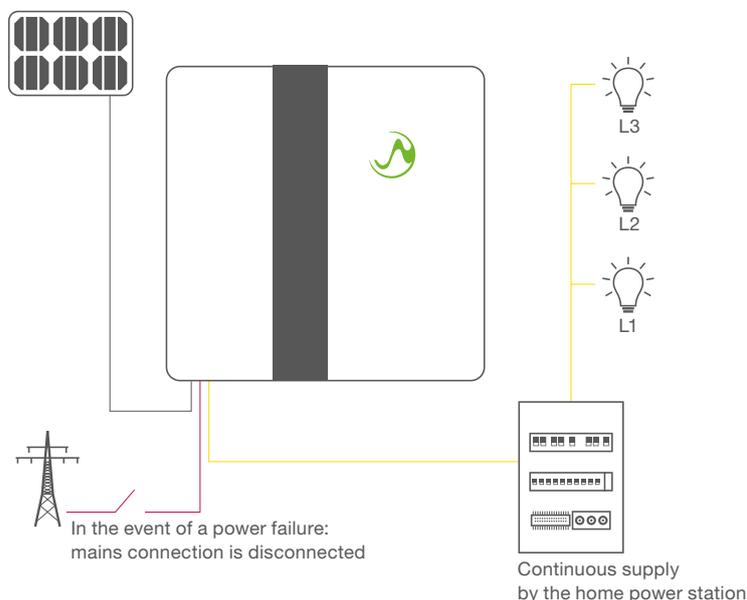
Emergency power in the S10 home power station

Important information about backup/emergency power operation in the S10 home power station

As long as there are no faults on the power grid, your S10 home power station will continue in normal grid parallel operation. It is connected to the local power grid and your PV system and feeds excess solar power into the grid. The energy management system regulates and optimises the use of solar power and minimises the power drawn from the grid. You can monitor your generation and consumption as well as the amount of power drawn from the grid at the E3/DC portal. The E3/DC portal shows you a lot of operating data, including your maximum power consumption level in the course of a day. A comparison with the home power station discharge power shows whether you can safely continue to operate your usual load profile in case of a power failure (that is to say, if you are solely dependent on the batteries and the PV system) or whether you will need to reduce the load.

What happens in the event of a power failure?

If the power grid fails, your S10 home power station will automatically switch to emergency power operation within a few seconds, and will continue until the grid is available again. In the meantime, the house will be powered solely by your PV system (if there is solar energy available) and your home power station batteries. Emergency power operation is limited by the discharge power of the home power station and by battery capacity.



Requirements for emergency power operation/availability

In an urgent situation, safe and stable emergency power operation is only possible if there is sufficient battery capacity available. In order to keep some secure capacity available, regardless of the discharge cycles of normal operation, you can use the home power station control menu to define an emergency power reserve. This capacity will then be withheld from use in normal operation. The only exceptions are the regular calibration cycles. These full cycles controlled by the software are required for the correct measurement of the battery levels. After complete discharge, the battery is recharged. Where necessary, mains electricity will also be used for this purpose.

If there is PV power available during the power failure, the battery will also be recharged in emergency power mode and continuous operation will be possible over a longer period. However, in emergency power mode you must ensure that the total load requirements of the active energy consumers do not overload the system. The determinant factor is the battery power of your home power station (see table). It can be increased somewhat by PV power if there is sunshine, but safe operation can only be ensured if the maximum load is below the maximum battery power.

Load reduction options

A power failure usually occurs unexpectedly. If you find that you have switched on loads that are too high, the best way to secure your essential applications is to switch off any unnecessary loads manually. If an overload has already occurred, the home power station will return to emergency power operation after reduction of the load.

Your installation technician can connect certain energy consumers via the building's distribution cabinet in such a way that they are separated from the home power station when it is in emergency power mode. For example, if battery power is too low, then the heavy power consumption kitchen circuit or the heat pump could be excluded to ensure that lighting, communication and other important applications can remain in operation.

Shutdown and black start

In the event of a prolonged power failure and darkness, the battery capacity can be reduced to such an extent that your home power station will switch itself off for safety. As soon as the PV system supplies enough energy again, the batteries will recharge and the home power station will start up again (without grid power) in emergency power mode.

Battery backup (S10 E + PRO) and emergency power option (S10 MINI)

Depending on your version of the S10 home power station, you either have real 3-phase battery backup operation that creates your own stand-alone power grid, or you have a limited emergency power option with a selective circuit.

The S10 E and S10 E PRO home power stations disconnect themselves from the public power grid and form their own in-house 3-phase power grid. For this purpose, the home power station is disconnected from the power grid at all terminals, that is to say from all current-carrying conductors. Your home power station must be equipped with an optional motor switch for the battery backup function, which can be installed at the factory or retrofitted later.

The S10 MINI home power station also disconnects from the public power grid. After a short switchover time, the device changes to limited emergency power mode. This model supplies individual devices with power via a single-phase consumer connection on the power station. In this selective circuit, power is supplied via the batteries and, in the case of surplus production, via the PV system.

	S10 MINI	S10 E	S10 E PRO
solar rechargeable	yes	yes	yes
battery power (kW)	1.5	3–4.5 (refer to data sheet, according to storage configuration)	6–9 (refer to data sheet, according to storage configuration)
battery capacity (kWh)	3.25–6.5	6.5–18 24–36 with additional cabinet	13–19.5 26–39 with additional cabinet
reserve adjustable	yes	yes	yes
suitability	low-power 1ph consumers	low-power 3ph consumers	universal solution 3ph standard



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