

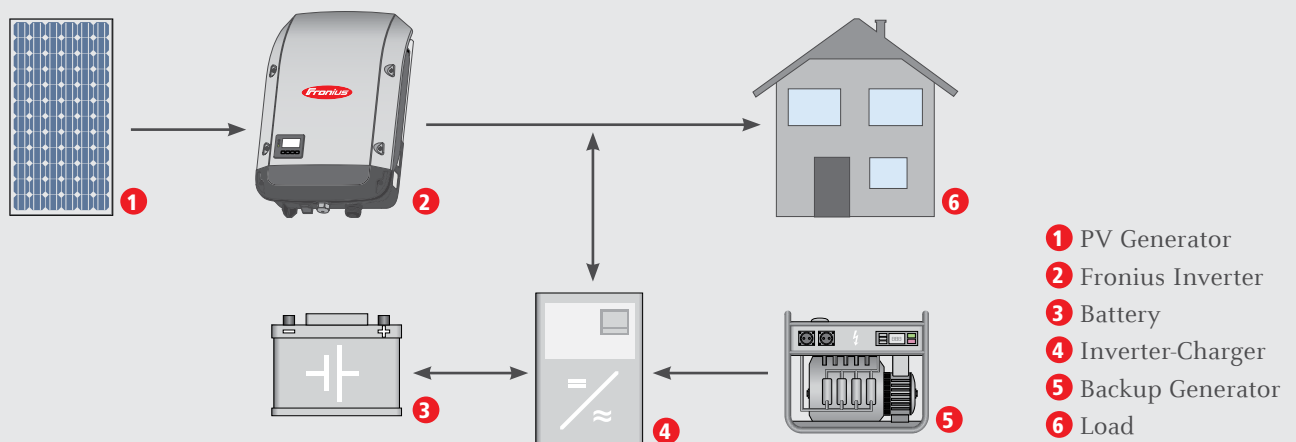


FRONIUS MICROGRID SOLUTION

/ PV in combination with an Inverter-Charger



/ MicroGrids in remote areas are often powered by Inverter-Chargers. These are inverters with batteries able to operate a MicroGrid. PV Systems with Fronius inverters can be easily integrated into such MicroGrids. For this reason Fronius inverters have a special MicroGrid Setup that includes several functions which support a stable operation of the MicroGrid. All functions are fully adjustable for optimising the combination of PV with an Inverter-Charger.



/ MicroGrid System with PV

/ The Fronius inverter provides as much PV energy as possible to the MicroGrid. Automatic PV power reduction is necessary in times where the load is lower than the possible PV production and the batteries are full (or when the charging power of the Inverter-Charger is too small).

/ Typically the power of the inverter is controlled without any communication. In this case the frequency droop of

the Inverter-Charger and the frequency droop of the Fronius inverter cause optimal power setpoints.

/ In addition to the frequency droop, a function for voltage dependent power reduction to prevent from over voltage caused tripping, and several reactive power control functions, can be activated and fully configured.

/ There is also a possibility to implement communication between the Inverter-Charger and the Fronius inverter or to implement load measurement to limit the maximum power that is to be consumed by the Inverter-Charger. This can be realised with using the Fronius PV-System Controller. With these possibilities the size of the PV-system can be large in comparison to the size of the Inverter-charger for optimised systems.

/ It is also possible to control the Fronius inverter via a 3rd party device. The available communication solutions are Modbus RTU or TCP (SunSpec Alliance Protocol) and/or Fronius Interface Protocol.

/ Furthermore, the protection settings in the MicroGrid Setup are configurable. Whether the same settings for the MicroGrid are also applicable for systems which are sometimes connected to the utility grid, depends on local connection rules.

FRONIUS PRODUCTS AVAILABLE FOR MICROGRIDS¹⁾:

All Fronius Inverters, Fronius PV-System Controller and Current Transducers.

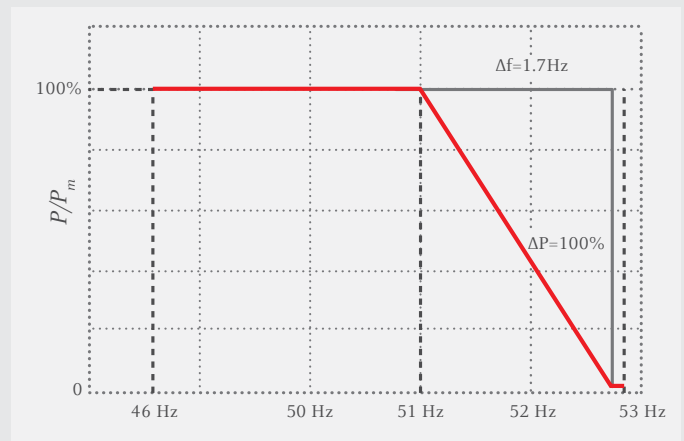
Inverter-Charger products tested in combination with Fronius inverters²⁾:

/ Studer Xtender

/ Victron MultiPlus and Quattro

1) The possible combinations of equipment must be coordinated with the Fronius Technical Support.

2) With these products the Fronius MicroGrid Setup can be used without further configuration effort at the Fronius inverter. The standard settings work in correctly sized systems (The Inverter-Charger has to be configured according its manuals).



/ Frequency droop function of Fronius inverters with MicroGrid setup. Fully adjustable to harmonise perfectly with the Inverter-Charger.

/ Perfect Welding / Solar Energy / Perfect Charging

WE HAVE THREE DIVISIONS AND ONE PASSION: SHIFTING THE LIMITS OF POSSIBILITY.

/ Whether welding technology, photovoltaics or battery charging technology – our goal is clearly defined: to be the innovation leader. With around 3,000 employees worldwide, we shift the limits of what's possible - our more than 850 active patents are testimony to this. While others progress step by step, we innovate in leaps and bounds. Just as we've always done. The responsible use of our resources forms the basis of our corporate policy.

Further information about all Fronius products and our global sales partners and representatives can be found at www.fronius.com

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