

# AC-coupled PV with Fronius PV Inverters

This document describes how to setup Energy-storage, Off-grid/Micro-grid and Backup systems with AC-coupled PV, using Fronius PV Inverters. For Fronius information on the same subject, see their [MicroGrid flyer](#).

The Victron system monitor, the [Color Control GX](#) includes [built-in Fronius monitoring](#).

## Frequency shifting

To make sure that the Fronius PV inverter works well with Victron inverter/chargers, both must be configured with the right 'frequency shift settings':

- The Fronius PV Inverter must be set to Setup MG, short for Micro-Grid.
- The Victron inverter/charger must be loaded with either the PV Inverter support Assistant or the Hub-2 v3 Assistant.

And the [1:1 rule](#) must be adhered to.

## Fronius / Victron specifics

This is a very easy setup. The Fronius Setup MG has been developed in close cooperation with Victron Energy. During commissioning, set the PV Inverter to Setup MG 50, or Setup MG 60 for 60 Hz systems. Everything is then pre-configured. The Setup MG settings match the default Victron Assistant settings.

Compatible inverters are:

- Fronius IG Plus V (1~, 2~, 3~, 2.5 kW up to 12 kW) → from IGF 5.0.66 on with settings according to the VICTRON recommendations.
- Fronius Galvo (1~, 1.5 kW up to 3.1 kW) → use latest FW
- Fronius Symo (3~, 3 kW up to 20 kW) → use latest FW
- Fronius Primo (1~, 3 kW up to 8.2 kW) → use latest FW
- Fronius Eco (3~, 25 kW up to 27 kW) → use latest FW
- Fronius Agilo (3~, 75 kW up to 100 kW) → use latest FW

Recommended for new systems are the Symo or Eco inverters for 3~ systems and Primo inverters for 1~ systems. Do note that these two products are transformerless and therefore PV-Modules that need to be grounded cannot be connected.

When the PV modules need to be grounded, use inverters from the IG Plus V series or Fronius Galvo inverters.

When setting up a system, always update both the Fronius and the Victron devices to their latest firmware versions. For the latest Fronius firmware and information how to update use this link: [Fronius firmware update](#)

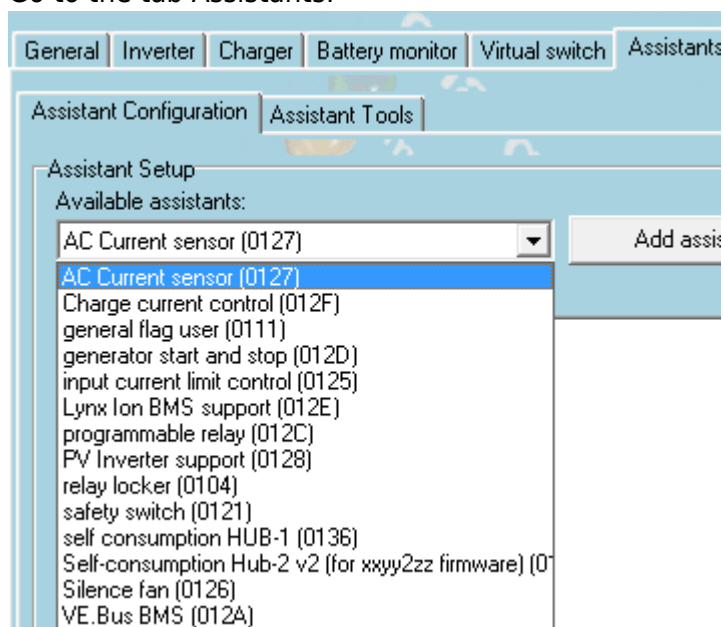
## Setting up the Fronius with MG 50/60

When not pre-ordered with a MicroGrid setup, follow these steps:

1. Make sure that the Fronius PV inverter is updated to at least the firmware version mentioned above. See Inverter list above.
2. After making the inverter operational according to the manual, select the language and after this the country specific setup.
3. Here choose MG50 or MG60 depending on the system frequency.
4. Ready to start up.

## Setting up the Victron Multi or Quattro

1. After connecting the MultiPlus or Quattro with the battery, you can now connect a computer through the VE.Bus (in combination with the Victron interface MK2USB) to configure the system with the latest version of the software VE.Configure.
2. Go to the tab Assistants:



3. Add one of the Assistants that regulate output frequency:
  1. Self-consumption Hub-2 v2
  2. Self-consumption Hub-2 v3
  3. PV Inverter support
4. Note that it is not necessary to change the default settings in the Assistant.
5. Complete the rest of the Assistant and write the new settings to the MultiPlus or Quattro.

Table for settings for 50Hz and 60Hz frequency

state	50Hz	60Hz	.
Start	50.2	60.2	Hz
Minimum	52.7	62.7	Hz
Disconnect	53.0	63.0	Hz

More information on adding Assistans is [here](#).

## Frequently asked questions

### Why doesn't the frequency settings in the Multi and the Fronius need to be the same?

The first two frequencies do not need to be the same since the Multi actively regulates.

### I have an Fronius IG inverter (not Plus), can that work?

No, the IG inverters cannot be made to work in a MicroGrid system. The appropriate substitute for an IG 30 is the GALVO 2.5-1 or an IG Plus 25V-1 (depending on the desired DC voltage range).

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