Wels, March 21st 2018

FRONIUS EXPORT LIMITATION

Fronius International GmbH

confirms that inverters

/ **Fronius Symo 10.0-3 208-240 – 12.0-3 208-240**

/ **Fronius Symo 10.0-3 480 – 24.0-3 480**

/ **Fronius Symo 15.0-3 208**

/ **Fronius Primo 3.8-1 208-240 – 15.0-1 208-240**

can be used together with

/ **Fronius Smart Meter 240 V-3 UL**

/ **Fronius Smart Meter 480 V-3 UL**

/ **Fronius Smart Meter 600 V-3 UL**

to limit the export power to the grid to a predefined value between 0% and 100% of the inverter power. (The datamanager firmware has to be version 3.8.1-6 or above. The inverter firmware has to be version SW V0.3.10.2 or above.)

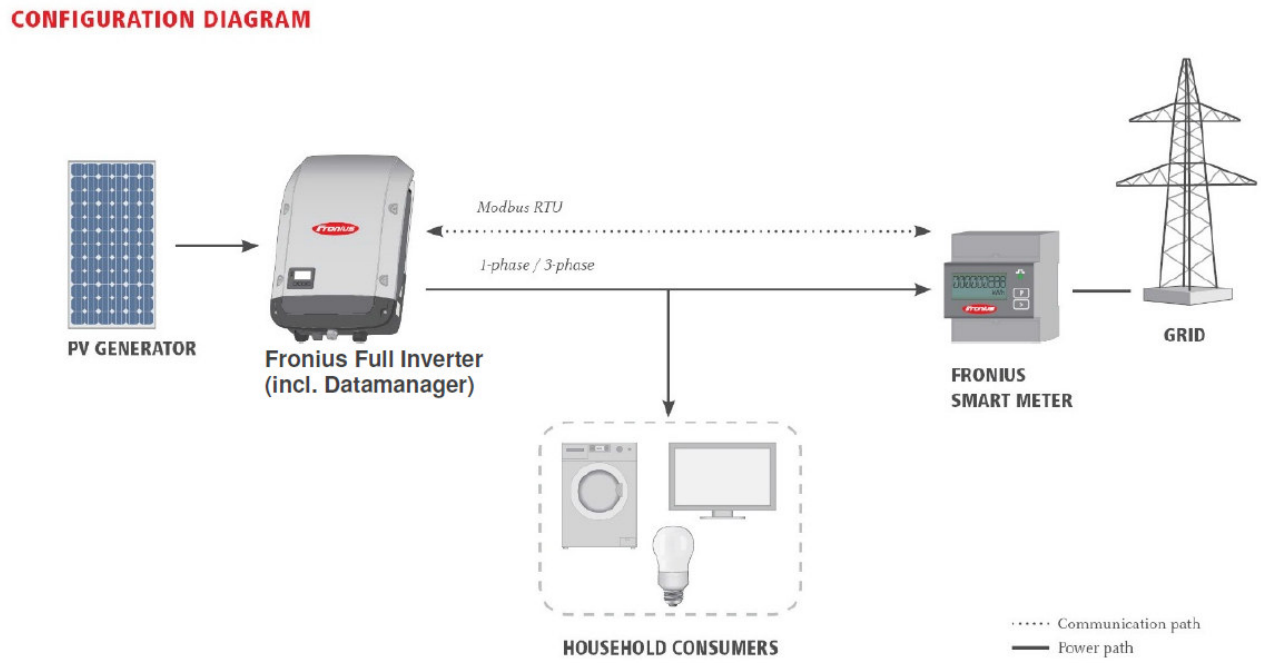
- The predefined value has to be set within a password protected menu.
- Inverter is connected to the Fronius Smart Meter via hard wired Modbus RTU (RS-485). (The Fronius Export Limitation does not rely on any wireless communication links.)
- When the export limitations scheme operates it will reduce the exported Apparent Power to a value that is equal to, or less than, the Maximum Export Capacity within 5s.

  This performance requirement is fulfilled with any step change in load within the controlled system. See “Examples of test results”.

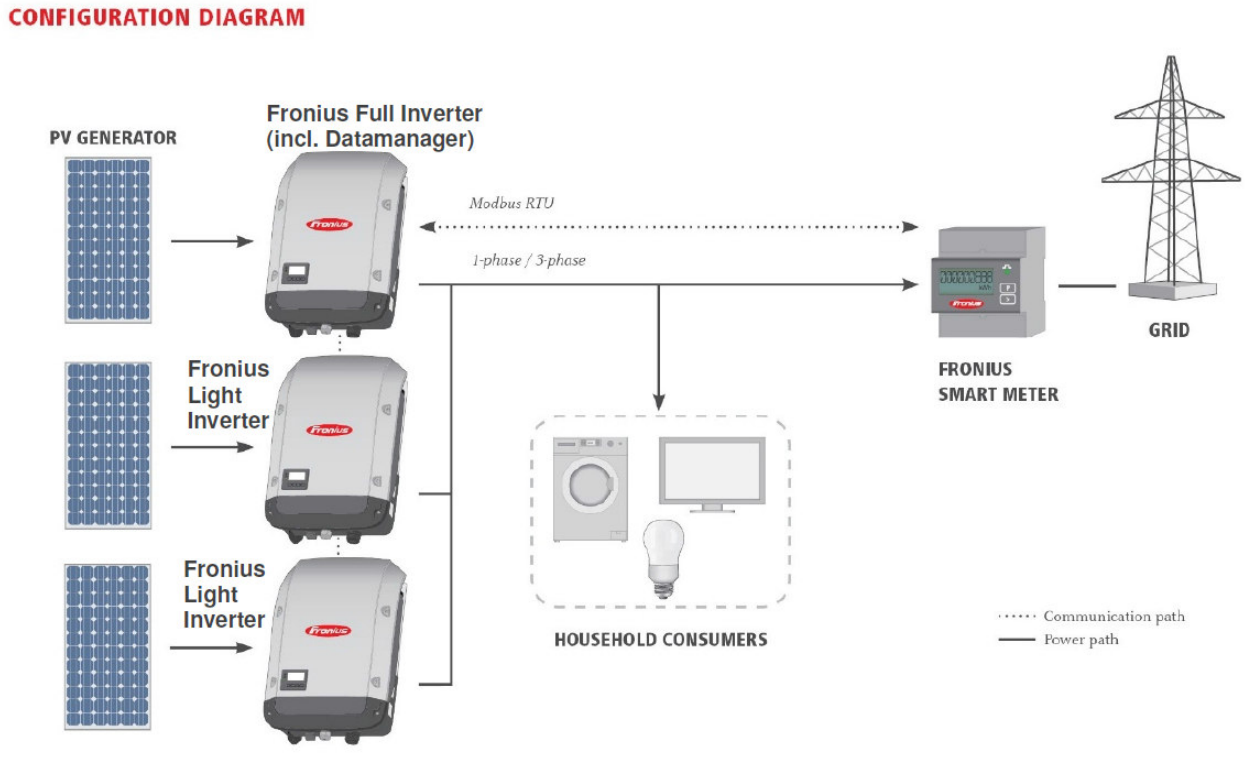
  Granular monitoring data can be made available upon request.

  Instantaneous monitoring is available via a Modbus interface as well as via the Solar-API (JSON interface). The 10 minute average log data are available via an online web portal Fronius Solar.Web,
- If the Fronius Inverter does not receive signals from the Fronius Smart Meter (e.g.: because of a defect Smart Meter, or a disconnection of the Modbus Communication,…) or if the datamanager fails to operate the inverter immediately limits its output power to a maximum of the predefined value. In case of an AC power loss at the inverter, the inverter stops operation.

Configuration scheme with one inverter:

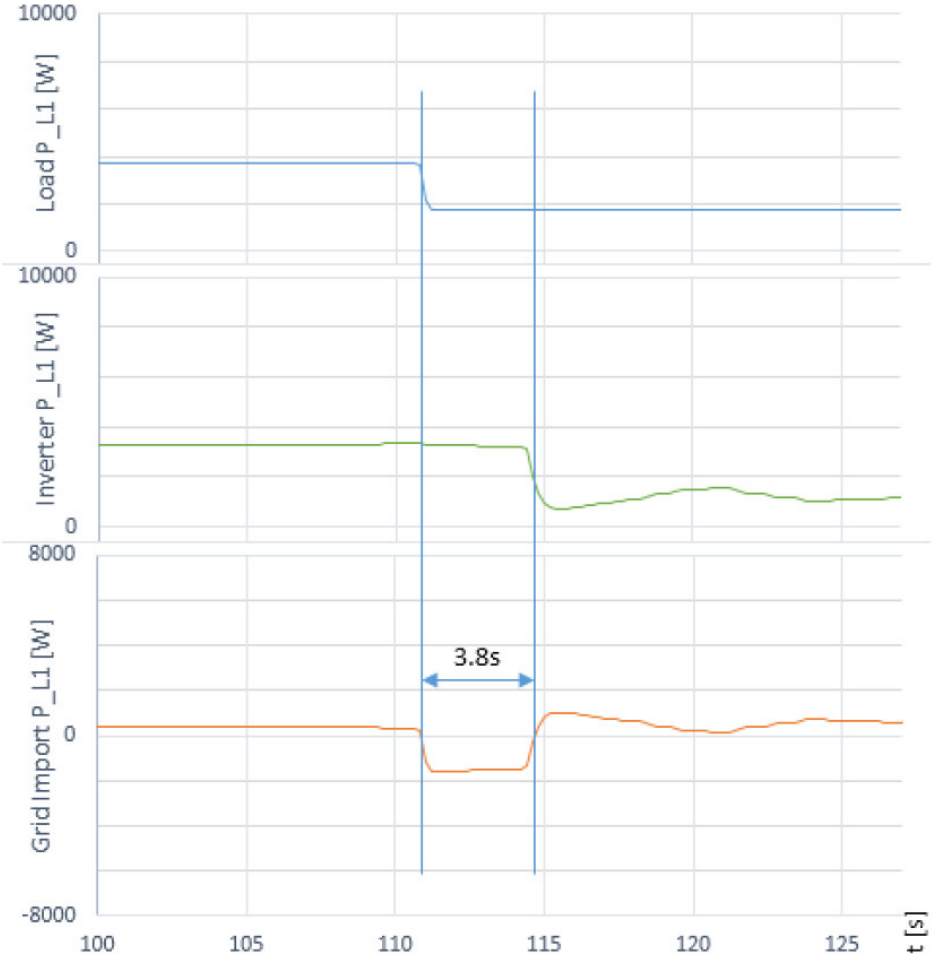


Configuration scheme with several inverters:



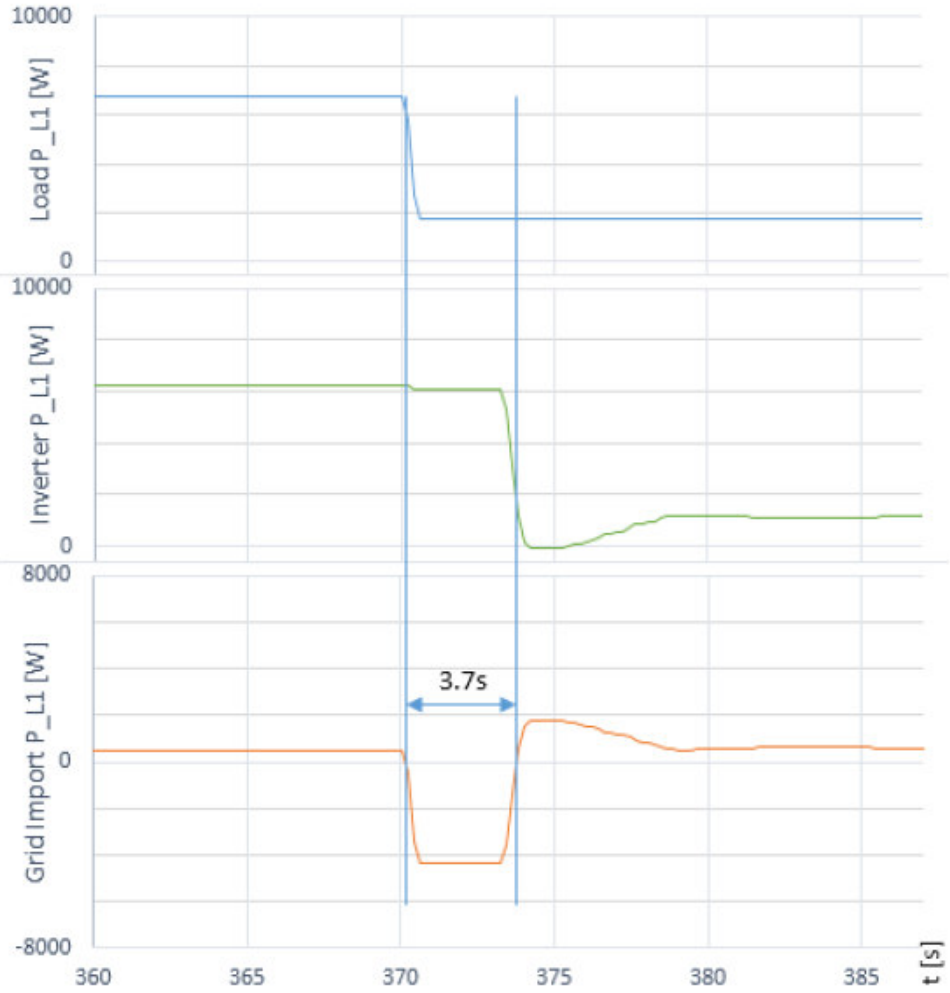
Examples of test results to show the compliance to reduce the exported power to a value that is equal to, or less than, the Maximum Export Capacity within 5s:

Test Case 1:
Export Limit: 0%
Fronius Primo 8.2-1
Load step from 3690 W to 1720 W



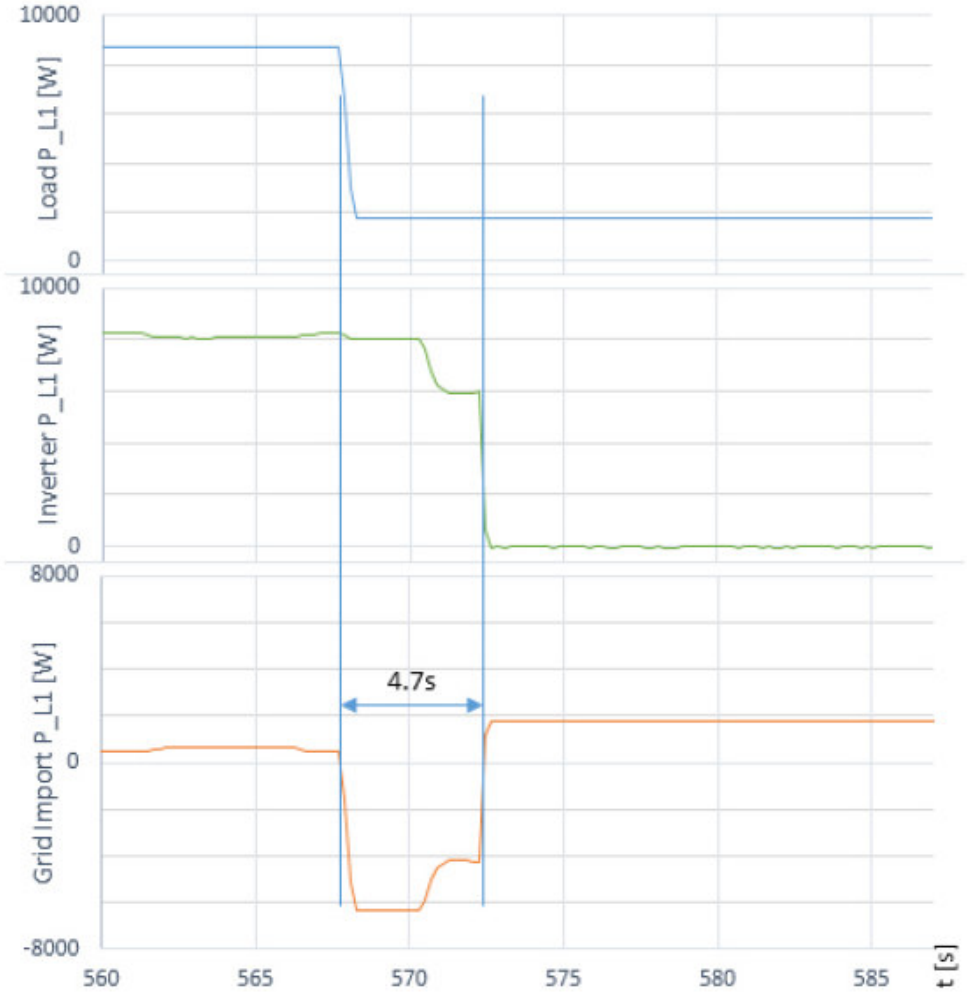
The inverter operates at a safety margin. At a change in load of 1970 W (24%) there is no export power after 3.8 s.

Test Case 2:
Export Limit: 0%
Fronius Primo 8.2-1
Load step from 6710 W to 1725 W



The inverter operates at a safety margin. At a change in load of 4985 W (61%) there is no export power after 3.7 s.

Test Case 3:
Export Limit: 0%
Fronius Primo 8.2-1
Load step from 8710 W to 1730 W



The inverter operates at a safety margin. At a change in load of 6980 W (85%) there is no export power after 4.7 s. In this case the inverter trips as a precaution at 4.7 s not to reach the 5 s limit.

All above listed inverters behave the same way as the inverter shown as example.

Fronius International GmbH
Business Unit Solar Energy
Froniusplatz 1
A-4600 Wels

DI Dr. Martin Heidl
Head of Systems Technology