



Wels, September 29th 2020

CONFORMITY TO EN 50549-1 WITH SETUP SWEDEN

Fronius International GmbH

hereby confirms that the Fronius inverters

- / **Fronius Primo**
- / **Fronius Symo**
- / **Fronius Symo Hybrid**
- / **Fronius Eco**
- / **Fronius Symo GEN24**

do fulfil the European standard EN 50549-1, as well as the country specific regulations in Sweden given by “Energimarknadsinspektionens föreskrifter om fastställande av generellt tillämpliga krav för nätanslutning av generatorer” (EIFS 2018:2). When choosing the inverter integrated “Setup Sweden”, the following are valid:

- / Relay protection settings as described in the table below:

Relay protection settings (found in inverter type test protocol)	Set Value	
	Time	Level
Overtoltage (step 2)	60 s	255.3 V *
Overtoltage (step 1)	0.2 s	264.5 V
Undervoltage	0.2 s	195.5 V
Overfrequency	0.1 s	51.5 Hz
Underfrequency	0.1 s	47.5 Hz

** The overvoltage (step 2) level can be manually changed to the new value (253 V) and will be implemented in the “Setup Sweden” within the next software release.*

- / The inverters are equipped with a Loss of Mains trip function according to IEC 62116.
- / The inverters remain connected to the public electricity supply grid for:

At least 30 minutes in the frequency range 47.5 – 48.5 Hz
At least 30 minutes in the frequency range 48.5 – 49.0 Hz
Unlimited time in the frequency range 49.0 – 51.0 Hz
At least 30 minutes in the frequency range 51.0 – 51.5 Hz

- / The inverters have a rate of change of frequency (ROCOF) immunity of at least 2.0 Hz/s
- / The inverters reduce their active power output when the frequency exceeds 50.5 Hz
- / A static factor of 8% is preconfigured during LFSM-O.



- / The inverters will not reduce active power output by more than 3% per Hz for frequencies lower than 49.0 Hz, unless the availability of the primary energy requires otherwise.
- / Automatic reconnection occurs only within the frequency range of 47.5 – 50.1 Hz, and after the mains frequency has been within this range for at least 180 s.
- / A maximum gradient of 9.6% $P_{\text{nominal}}/\text{min}$ is preconfigured for active power increase during automatic connection, for frequencies below 50.1 Hz. No increase in active power output occurs above 50.1 Hz.
- / During LFSM-O, the lowest level of control capacity that can be reached by the inverters is 0% P_{nominal} .

Fronius International GmbH

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A handwritten signature in blue ink, which appears to read "Bernhard Kossak".

Bernhard Kossak, MSc

Head of Systems Technology