

ADDING INVERTERS TO THE ELEKTRILEVI LIST (≤ 500 kW)

Technical requirements and compliance

The power-generating module must comply with European Parliament and Council Directives [2014/35/EU](#), [2014/30/EU](#) and have a mark of conformity in accordance with Regulation (EC) No [765/2008](#).

The power-generating module must comply with the requirements of Article 13 of the European Commission Regulation [2016/631/EU](#) and meet the Regulation of the Government of the Republic of Estonia „[Elektrisüsteemi toimimise võrgueeskiri](#)“.

Nationally determined technical parameters which the power-generating module must comply with:

1. A power-generating module shall be capable of remaining connected to the network and operate within the frequency ranges and time periods specified in Table 1.

Table 1 – Minimum time periods for which a power-generating module has to be capable of operating on different frequencies, deviating from a nominal value, without disconnecting from the network.

Frequency range	Time period of operation
47,5 Hz – 49,0 Hz	30 minutes
49,0 Hz – 51,0 Hz	Unlimited
51,0 Hz – 51,5 Hz	30 minutes

2. A power-generating module shall be capable of staying connected to the network and operate at rates of change of frequency up to **2,5 Hz/s**.
3. With regard to the limited frequency sensitive mode — overfrequency (LFSM-O), the following shall apply:
 - the power-generating module shall be capable of activating the provision of active power frequency response according to Figure 1:
 - the frequency threshold shall be **50,2 Hz** and the droop setting shall be **5%**.
4. The admissible active power reduction from maximum output with falling frequency in its control area as a rate of reduction falling within the boundaries, illustrated by the full lines in Figure 2:
5. Admissible active power reduction from maximum output with falling frequency is illustrated in Figure 2:
 - below 49 Hz falling by a reduction rate of **2%** of the maximum capacity at 50 Hz per 1 Hz frequency drop.

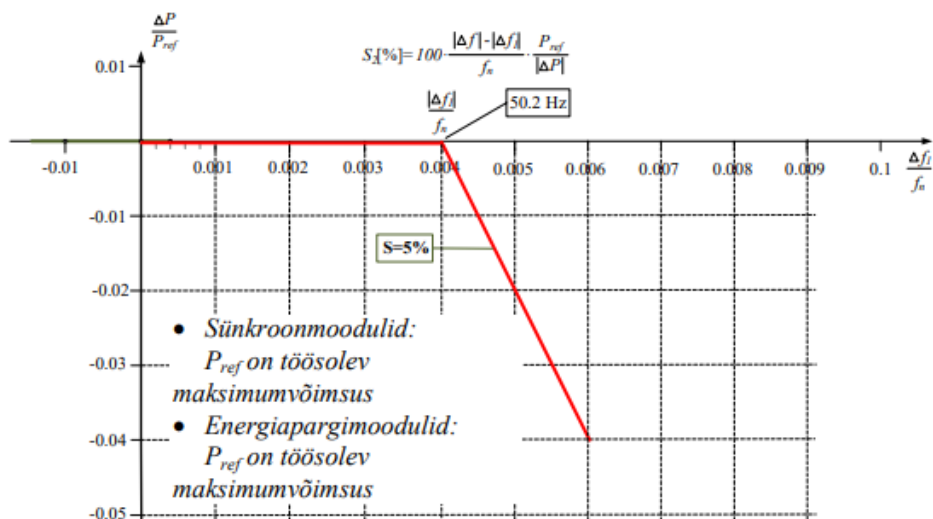


Figure 1 – Active power frequency response capability of power-generating modules in LFSM-O
 P_{ref} is the reference active power to which ΔP is related and may be specified differently for synchronous power-generating modules and power park modules. ΔP is the change in active power output from the power-generating module. f_n is the nominal frequency (50 Hz) in the network and Δf is the frequency deviation in the network. At overfrequencies where Δf is above $\Delta f_1 = 0,2$ Hz, the power-generating module has to provide a negative active power output change according to the droop $S_2 = 5\%$

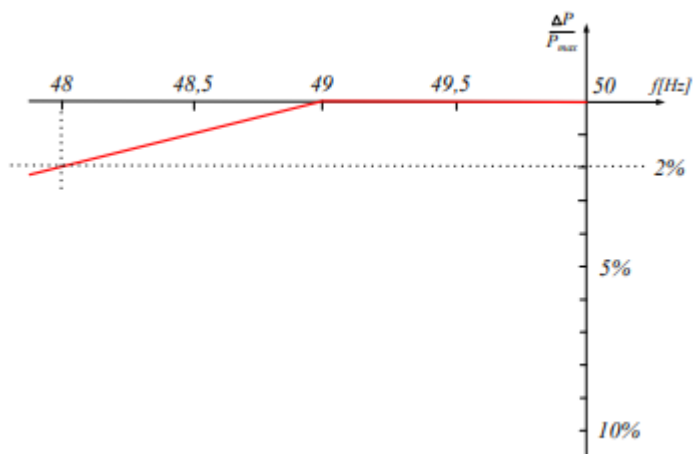


Figure 2 – Maximum power capability reduction with falling frequency

Apply for the list

In order to apply for the list, the following information must be submitted to Elektrilevi:

- Datasheet of the device ;
- Test reports, certificates and/or factory approvals that demonstrate compliance with the above requirements;
- A brief description of the configuration of the inverter or other accessories that ensure compliance with the Grid Code of Estonia;
- Contact information of the Manufacturer.