Setting for grid operator of Czech Republic

SolaX Power Network Technology (Zhe jiang) Co. , Ltd.

hereby confirms that the following inverters fulfill EN 50549-1:2019:

Declaration of conformity with PPDS 2018, part of grid protection settings, further relating to RfG regulation 2016/631 (EU).

Here with SolaX Power Netword Technology (Zhejiang) CO.,LTD. declares, that the following products are compliant to the below described properties required by RFG 2016/631(EU) described in EN50549-1, and fullfill the requirements of Czech grid regulations authorities according PPDS 2018 př.č. 4:

X1-3.0-T-D(L) **X1-3.0-T-N(L)**

X1-3.3-T-D(L) **X1-3.3-T-N(L)**

X1-3.6-T-D(L) **X1-3.6-T-N(L)**

X1-4.2-T-D(L) **X1-4.2-T-N(L)**

X1-4.6-T-D(L) **X1-4.6-T-N(L)**

X1-5.0-T-D(L) **X1-5.0-T-N(L)**

A.) Grid protection settings according PPDS 2018 pr.c.4, section 8.1 (MIKROZDROJE)

Parameter	Maximum disconnect time	Trip value
overvoltage 1. level (1)	3	230V + 10% (253 VAC)
overvoltage 2. level	0,2	230V + 15% (264,5 VAC)
overvoltage 3. level	0,1	230V + 20% (276 VAC)
undervoltage	1,5	230V - 15% (195,5 VAC)
overfrequency	0,5	52 Hz
underfrequency	0,5	47,5 Hz

(1) 10min value corresponding to EN50160. The calculation of the 10-min value shall comply with the 10min aggregation of EN EN61000-4-30, class S. The function shall be based on the calculation of the square root of the arithmetic mean of the squared input values over 10min. In deviation from EN61000-4-30 a moving window shall be used. The calculation of a new 10min value at least every 3s is sufficient.

B.) FREQUENCY AND VOLTAGE STABILITY according PPDS 2018 pr.c.4, section 9.1.1 and 9.1.2.

The inverters are not allowed to disconnect from grid within changes of frequency specified with a RoCoF immunity of at least +/- 2Hz/s in the time and f-U windows specified below.

The minimum time period for operating in underfrequency and overfrequency situations:

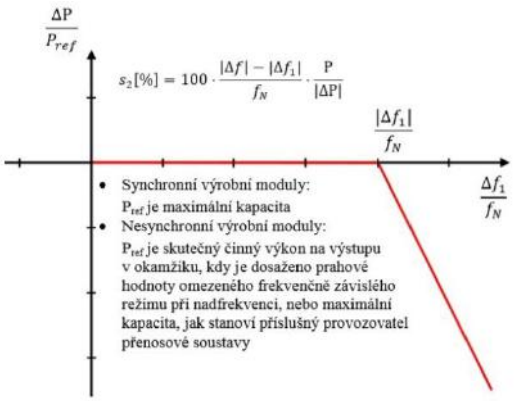
Rozsah frekvence	Doba trvání
47 – 47,5 Hz	**20 s**
47,5 – 48,5 Hz	30 min*
48,5 – 49 Hz	90 min*
49 – 51 Hz	neomezeně
51 – 51,5 Hz	30 min

The continuous operating voltage range is defined for the inverters within the range of 85% Un to 110% Un at the point of connection.

C.) POWER RESPONSE TO OVERFREQUENCY according PPDS 2018 pr.c.4, section 9.3.1 .

Inverters are capable of activating active power response to overfrequency at a frequency threshold f1 at least between and including 50,2 Hz and 52 Hz with a droop in a range of at least s=2 % to s=12 %.

Default values for threshold f in CZ are 50,2 HZ and s=5%



D.) POWER RESPONSE TO UNDERFREQUENCY according PPDS 2018 pr.c.4, section 9.3.2.

The inverters power is 100% stable within underfrequency occurences in the range of 47,5 to 50,0 Hz

E.) DIGITAL INPUT TO THE INTERFACE PROTECTION according PPDS 2018 pr.c.4, section 5.1

The inverters are equipped with an EPO port to allow transfer trip and stop immediately the power feeding tot he grid.

F.) AUTOMATIC RECONNECTION AFTER TRIPPING

The inverter, disconnected from grid by the protections, will automatically re-connect,

1. if the voltage and frequency is observed for 300s (5min) in the range of:

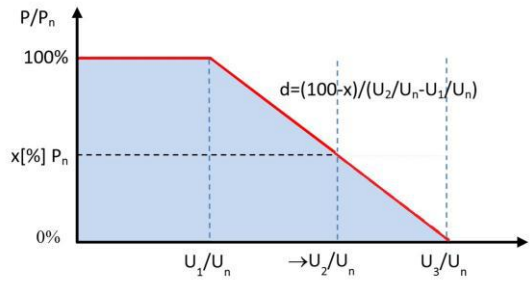
   Voltage: 85-110 % of its nominal value
   Frequency: 47,5-50,05 Hz

2. with a ramp up curve of 10% Pn per minute

OTHERS:

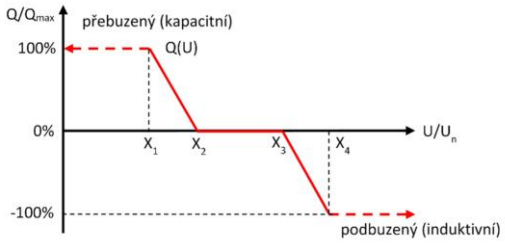
Function P(U), Q(U) and P(f) according PPDS 2018 pr.c.4, section 9.3.3 and 9.4. and 9.3.1 The inverters are able to follow the above mentioned required functions. The default values are as written below. For activation or further information

B.1 for P(U):



U1/Un = 109%; U2/Un = 110%; U3/Un = 111%

B.2 for Q(U):



x1 = 0,94; x2 = 0,97; x3 = 1,05; x4 = 1,08

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