Declaration of conformity with PPDS 2021 and with

selected properties according to regulation RfG 2016/631

Manufacturer SolaX Power Network Technology (Zhejiang) CO.,LTD. hereby confirms the compliance of the inverters listed below with the selected characteristics of the standard EN50549-1, required regulation RfG 2016/631 (EUand compliance with the requirements of the specified grid operator in PPDS 2021, attachment nr. 4:

Inverters series:

	X3-MGA-50K-G2	X3-MGA-60K-G2	
X3-FTH-80K	X3-FTH-100K	X3-FTH-110K	X3-FTH-120K

A.) GRID PROTECTION

Parameter	Recommend disconnect time	Recommend trip value[2]	Settings range
overvoltage 3. level	0,1s	230V + 25% (287,5 VAC)	1,00 – 1,30 Un
overvoltage 2. level	5s	230V + 20% (276 VAC)	1,00 – 1,30 Un
overvoltage 1. level[1]	<=60s	230V + 15% (264,5 VAC)	1,00 – 1,30 Un
under voltage 1. level <	2,7s (0 – 2,7s)	230V - 30% (161,0 VAC)	0,10 – 1,00 Un
under voltage 2. level <<	0,2s (>= 0,15s)	230V - 55% (103,5 VAC)	0,10 – 1,00 Un
overfrequency	<= 100ms	51,5 Hz	50 – 52 Hz
underfrequency	<= 100ms	47,5 Hz	47,5 – 50 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.

(2) Disconnecting time needs to be adjustable to meet requirement of LVRT and HVRT function

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B.) FREQUENCY STABILITY acc. PPDS 2021 př.č.4, paragraph 9.1.1 a 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

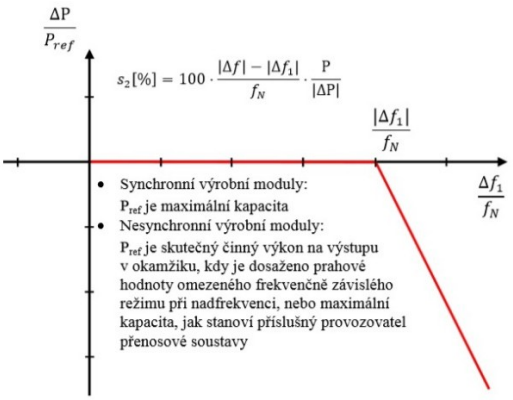
The minimum time period for operating in underfrequency and overfrequency situations:

Frequency range	Minimal duration time
47,5 – 48,5 Hz	30 min
48,5 – 49 Hz	90 min
49 – 51 Hz	unlimited
51 – 51,5 Hz	30 min

The range of continuous operation for voltage values is defined from 85% to 110% nominal voltage.

C.) POWER RESPONSE TO OVERFREQUENCY acc. PPDS 2021 př.č.4, article 9.3.1.

Inverters are capable of activating active power response to overfrequency at a frequency threshold f1 at least between and including 50,05 Hz and 52 Hz with a droop in a range of at least s=4 % to s=10 %.



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

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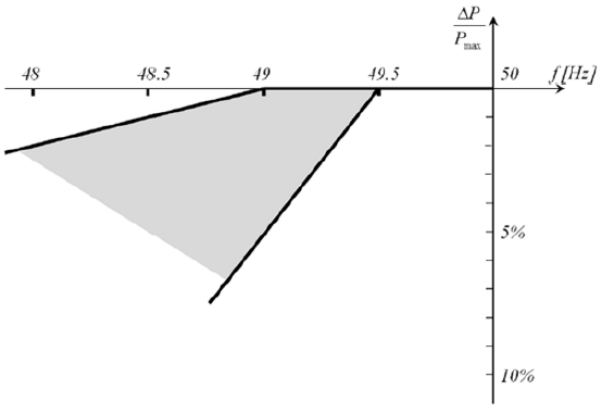
D.) POWER RESPONSE TO UNDERFREQUENCY acc. PPDS 2021 př.č.4, article 9.3.2.

The reduction of the active power depending on the underfrequency is defined by the corresponding graph



E.) REQUIREMENT FOR EQUIPMENT WITH A LOGIC MODULE acc PPDS 2021 př.č.4, article 5.1

The inverters are equipped with EPO input terminals, which disconnect the inverters from the grid and immediately interrupt the supply of active power.

F.) AUTOMATIC RECONNECTION REQUIREMENT

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

   In an out of range event, the observation time of 300s will restart from the beginning.

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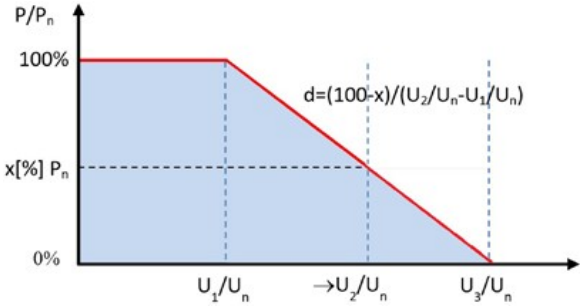
OTHERS:

Function P(U), Q(U) and LVRT, HVRT acc PPDS 2021 article.4, par. 9.3.5, 9.4.2 a 9.2.2.1, 9.2.2.2

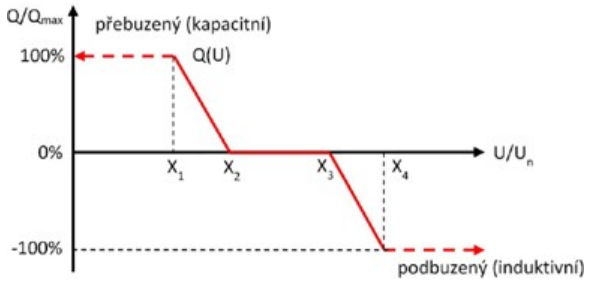
The above-mentioned inverters comply with the above-mentioned standards with the below-mentioned default values. For further information or to enable the function, please contact your local GBC Solino service partner.

1. Pro P(U)



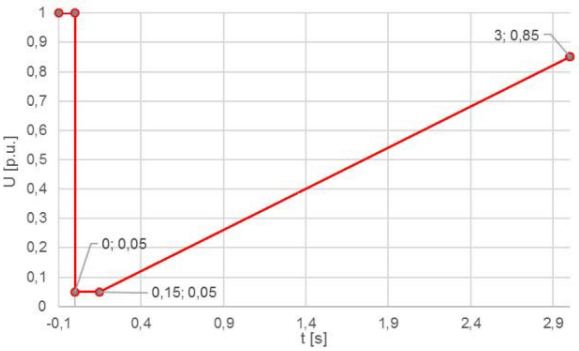
U1/Un = 109%; U2/Un = 110%; U3/Un = 111%

2. Pro Q(U)

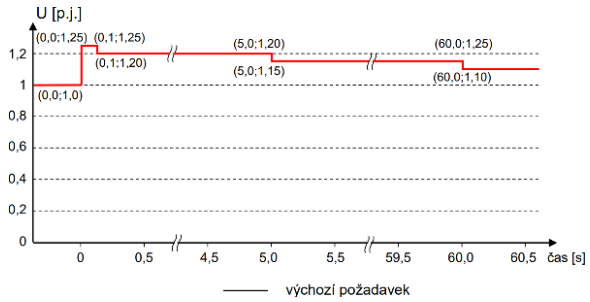


x1 = 0,94; x2 = 0,97; x3 = 1,05; x4 = 1,08

3. Pro LVRT



4. Pro HVRT (vyžaduje další nastavení)



Date: Dec, 20th 2022

Xiao Yongli – SIGNATURE REQUIRED (STAMP SOLAX POWER NETWORK TECHNOLOGY)

Xiao Yongli

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