Residential and C&I Products

Impedance at 175Hz

SUNGROW

1. Introduction

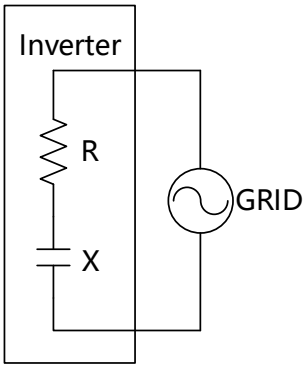
This document describes the impedance at 175Hz .

2. Impedance at 175Hz

For the tariff adjustment, the French grid operator ERDF uses a ripple control signal with a frequency of 175 Hz in its utility grid.

In order to assess the compatibility with the ripple control signal, ERDF requires the impedances of the generators feeding in.

To carry out the assessment, SUNGROW determined the impedances (R, X, |Z|) for its inverters at a frequency of 175 Hz. The following table lists the values for the different inverters.

Inverter device type	Series Connection 			Inverter output voltage
	X[Ω]	R[Ω]	|Z|[Ω]	
SG2K-S	-118.1	0.007	118.1	1*230V
SG2K5-S	-118.1	0.007	118.1	1*230V
SG3K-S	-118.1	0.007	118.1	1*230V
SG3K-D	-103.3	0.006	103.3	1*230V
SG3K6-D	-103.3	0.006	103.3	1*230V

SG4K-D	-103.3	0.006	103.3	1*230V
SG4K6-D	-103.3	0.006	103.3	1*230V
SG5K-D	-103.3	0.006	103.3	1*230V
SG6K-D	-103.3	0.006	103.3	1*230V
SG5KTL-MT	-133.7	0.007	133.7	3*400V
SG6KTL-MT	-133.7	0.007	133.7	3*400V
SG8KTL-M	-133.7	0.007	133.7	3*400V
SG10KTL-M	-133.7	0.007	133.7	3*400V
SG12KTL-M	-133.7	0.007	133.7	3*400V
SG15KTL-M	-113.7	0.007	113.7	3*400V
SG20KTL-M	-113.7	0.007	113.7	3*400V
SG2K-S	-118.1	0.008	118.1	1*230V
SG2K5-S	-118.1	0.008	118.1	1*230V
SG3K-S	-118.1	0.008	118.1	1*230V
SG3K-D	-103.3	0.007	103.4	1*230V
SG3K6-D	-103.3	0.007	103.4	1*230V
SG4K-D	-103.3	0.007	103.4	1*230V
SG4K6-D	-103.3	0.007	103.4	1*230V
SG5K-D	-103.3	0.007	103.4	1*230V
SG6K-D	-103.3	0.007	103.4	1*230V
SG8K-D	-74.5	0.006	74.6	1*230V

SG8K3-D	-74.5	0.006	74.6	1*230V
SG5KTL-MT	-133.7	0.007	133.8	3*400V
SG6KTL-MT	-133.7	0.007	133.8	3*400V
SG8KTL-M	-133.7	0.007	133.8	3*400V
SG10KTL-M	-133.7	0.007	133.8	3*400V
SG12KTL-M	-133.7	0.007	133.8	3*400V
SG15KTL-M	-113.7	0.007	113.7	3*400V
SG20KTL-M	-113.7	0.007	113.7	3*400V
SG30KTL-M	-62.3	0.006	62.3	3*400V
SG30CX	-58.299	0.006	58.299	3*400V
SG33CX	-44.8	0.005	44.8	3*400V
SG36KTL-M	-62.3	0.006	62.3	3*400V
SG40CX	-44.8	0.005	44.8	3*400V
SG50KTL-M-20	-30.3	0.006	30.3	3*400V
SG50CX	-44.8	0.005	44.8	3*400V
SG60KTL	-29.3	0.005	29.3	3*400V
SG80KTL	-29.3	0.005	29.3	3*400V
SG110CX	-25.054	0.006	25.054	3*400V
SG125HV	-22.7	0.006	22.7	3*600V
SG250HX	-24.58	0.006	24.58	3*800V
SG2.0RS-S	-165.35	0.007	165.36	1*230V

SG2.5RS-S	-165.35	0.007	165.36	1*230V
SG3.0RS-S	-165.35	0.007	165.36	1*230V
SG3.0RS	-101.05	0.006	101.06	1*230V
SG3.6RS	-101.05	0.006	101.06	1*230V
SG4.0RS	-101.05	0.006	101.06	1*230V
SG5.0RS	-101.05	0.006	101.06	1*230V
SG6.0RS	-101.05	0.006	101.06	1*230V
SH3.0RS	-101.05	0.006	101.06	1*230V
SH3.6RS	-101.05	0.006	101.06	1*230V
SH4.0RS	-101.05	0.006	101.06	1*230V
SH5.0RS	-101.05	0.006	101.06	1*230V
SH6.0RS	-101.05	0.006	101.06	1*230V
SG3.0RT	-61.87	0.002	61.87	3*400V
SG4.0RT	-61.87	0.002	61.87	3*400V
SG5.0RT	-61.87	0.007	61.87	3*400V
SG6.0RT	-61.87	0.007	61.87	3*400V
SG7.0RT	-61.87	0.007	61.87	3*400V
SG8.0RT	-61.87	0.007	61.87	3*400V
SG10RT	-61.87	0.007	61.87	3*400V
SG12RT	-61.87	0.007	61.87	3*400V
SG15RT	-61.87	0.002	61.87	3*400V

SG17RT	-61.87	0.002	61.87	3*400V
SG20RT	-61.87	0.002	61.87	3*400V
SH3K6	-101.05	0.006	101.06	1*230V
SH4K6	-101.05	0.006	101.06	1*230V
SH5K-30	-101.05	0.006	101.06	1*230V
SH5.0RT	-82.72	0.01	82.72	3*400V
SH6.0RT	-82.72	0.01	82.72	3*400V
SH8.0RT	-82.72	0.01	82.72	3*400V
SH10RT	-82.72	0.01	82.72	3*400V
SG25CX-P2	-15.8	12.9	20.4	3*400V
SG30CX-P2	-15.8	12.9	20.4	3*400V
SG33CX-P2	-15.8	12.9	20.4	3*400V
SG36CX-P2	-15.3	10.8	18.6	3*400V
SG40CX-P2	-15.3	10.8	18.6	3*400V
SG50CX-P2	-15.3	10.8	18.6	3*400V
SG125CX-P2	-25.7	0.007	25.7	3*400V