



Harmonique de courant selon la norme 61000 3-12

Type d'onduleur: RPI-M15A

L'onduleur Delta RPI-M15A remplit les prescriptions sur les harmoniques selon la norme EN 61000 3-12.

Lieux: Laboratoire Delta Puissance AC: 15 kW
 Date du test: 15.01.2015 U_{PV}: 650 VDC
 Service: EMC Mode de fonctionnement: MPP

ÉLÉMENT	VALEUR	ÉLÉMENT	VALEUR	ÉLÉMENT	VALEUR
THD	2.06%	THD	1.92%	THD	1.94%
PWHD	3.36%	PWHD	3.21%	PWHD	3.15%

ORDRE (N)	LIMITE 61000 3-12	L1 IN(A)	L1 IN/I1	L2 IN(A)	L2 IN/I1	L3 IN(A)	L3 IN/I1	RESULT
1		21.9		22.0		21.9		
2	8,00%	0.111	0.51%	0.071	0.32%	0.105	0.48%	Pass
3	N/A	0.067	0.31%	0.083	0.38%	0.042	0.19%	
4	4,00%	0.055	0.25%	0.093	0.42%	0.063	0.29%	Pass
5	10,70%	0.203	0.93%	0.17	0.77%	0.186	0.85%	Pass
6	2,70%	0.055	0.25%	0.119	0.54%	0.071	0.33%	Pass
7	7,20%	0.179	0.82%	0.154	0.70%	0.158	0.72%	Pass
8	2,00%	0.046	0.21%	0.073	0.33%	0.051	0.23%	Pass
9	N/A	0.132	0.60%	0.067	0.30%	0.057	0.26%	
10	1,60%	0.024	0.11%	0.015	0.07%	0.03	0.14%	Pass
11	3,10%	0.118	0.54%	0.131	0.59%	0.149	0.68%	Pass
12	1,30%	0.016	0.07%	0.028	0.13%	0.023	0.10%	Pass
13	2,00%	0.202	0.92%	0.186	0.85%	0.207	0.94%	Pass
14	N/A	0.018	0.08%	0.013	0.06%	0.02	0.09%	
15	N/A	0.129	0.59%	0.059	0.27%	0.07	0.32%	
16	N/A	0.026	0.12%	0.045	0.20%	0.021	0.10%	
17	N/A	0.083	0.38%	0.127	0.58%	0.121	0.55%	
18	N/A	0.021	0.09%	0.045	0.20%	0.025	0.12%	
19	N/A	0.04	0.18%	0.036	0.16%	0.043	0.20%	
20	N/A	0.015	0.07%	0.018	0.08%	0.016	0.07%	
21	N/A	0.055	0.25%	0.026	0.12%	0.038	0.17%	
22	N/A	0.008	0.04%	0.007	0.03%	0.013	0.06%	
23	N/A	0.023	0.11%	0.033	0.15%	0.022	0.10%	
24	N/A	0.006	0.03%	0.008	0.04%	0.009	0.04%	
25	N/A	0.029	0.13%	0.022	0.10%	0.031	0.14%	
26	N/A	0.006	0.03%	0.005	0.02%	0.009	0.04%	
27	N/A	0.022	0.10%	0.009	0.04%	0.018	0.08%	
28	N/A	0.007	0.03%	0.009	0.04%	0.009	0.04%	
29	N/A	0.013	0.06%	0.01	0.05%	0.015	0.07%	
30	N/A	0.005	0.02%	0.011	0.05%	0.009	0.04%	
31	N/A	0.024	0.11%	0.024	0.11%	0.021	0.09%	
32	N/A	0.005	0.02%	0.006	0.03%	0.008	0.04%	
33	N/A	0.007	0.03%	0.004	0.02%	0.006	0.03%	
34	N/A	0.004	0.02%	0.004	0.02%	0.004	0.02%	
35	N/A	0.01	0.05%	0.011	0.05%	0.009	0.04%	
36	N/A	0.003	0.02%	0.004	0.02%	0.005	0.02%	
37	N/A	0.009	0.04%	0.011	0.05%	0.011	0.05%	
38	N/A	0.004	0.02%	0.004	0.02%	0.006	0.03%	
39	N/A	0.006	0.03%	0.005	0.02%	0.004	0.02%	



40	N/A	0.005	0.02%	0.004	0.02%	0.005	0.02%	
41	N/A	0.013	0.06%	0.012	0.05%	0.007	0.03%	
42	N/A	0.003	0.01%	0.004	0.02%	0.006	0.03%	
43	N/A	0.008	0.04%	0.01	0.05%	0.012	0.05%	
44	N/A	0.003	0.01%	0.003	0.01%	0.004	0.02%	
45	N/A	0.004	0.02%	0.005	0.02%	0.003	0.01%	
46	N/A	0.004	0.02%	0.002	0.01%	0.006	0.03%	
47	N/A	0.008	0.03%	0.009	0.04%	0.007	0.03%	
48	N/A	0.003	0.01%	0.003	0.01%	0.005	0.03%	
49	N/A	0.008	0.04%	0.009	0.04%	0.01	0.04%	
50	N/A	0.003	0.01%	0.003	0.01%	0.004	0.02%	

Impédance du coté AC à 175Hz

L'onduleur Delta SOLIVIA 15 EUG4 TL présente à 175Hz une impédance de sortie complexe de type $R+jX$:

$$R = 0.07119$$

$$X = -216.5373$$



Harmonique de courant selon la norme 61000 3-12

Type d'onduleur: RPI-M20A

L'onduleur Delta RPI-M20A remplit les prescriptions sur les harmoniques selon la norme EN 61000 3-12.

Lieux: Laboratoire Delta Puissance AC: 20 kW
 Date du test: 15.01.2015 U_{PV}: 650 VDC
 Service: EMC Mode de fonctionnement: MPP

ÉLÉMENT	VALEUR	ÉLÉMENT	VALEUR	ÉLÉMENT	VALEUR
THD	1.32%	THD	1.39%	THD	1.34%
PWHD	2.26%	PWHD	2.41%	PWHD	2.1%

ORDRE (N)	LIMITE 61000 13-2	L1 IN(A)	L1 IN/1	L2 IN(A)	L2 IN/1	L3 IN(A)	L3 IN/1	RESULT
1		29.2		29.3		29.2		
2	8,00%	0.085	0.29%	0.105	0.36%	0.116	0.40%	Pass
3	N/A	0.034	0.12%	0.081	0.28%	0.068	0.23%	
4	4,00%	0.055	0.19%	0.075	0.26%	0.071	0.24%	Pass
5	10,70%	0.182	0.62%	0.152	0.52%	0.165	0.56%	Pass
6	2,70%	0.037	0.13%	0.099	0.34%	0.074	0.25%	Pass
7	7,20%	0.136	0.47%	0.12	0.41%	0.143	0.49%	Pass
8	2,00%	0.05	0.17%	0.071	0.24%	0.038	0.13%	Pass
9	N/A	0.034	0.12%	0.033	0.11%	0.023	0.08%	
10	1,60%	0.025	0.09%	0.025	0.09%	0.032	0.11%	Pass
11	3,10%	0.138	0.47%	0.14	0.48%	0.111	0.38%	Pass
12	1,30%	0.02	0.07%	0.029	0.10%	0.024	0.08%	Pass
13	2,00%	0.191	0.65%	0.198	0.67%	0.203	0.69%	Pass
14	N/A	0.017	0.06%	0.024	0.08%	0.022	0.07%	
15	N/A	0.034	0.12%	0.019	0.07%	0.023	0.08%	
16	N/A	0.023	0.08%	0.036	0.12%	0.026	0.09%	
17	N/A	0.126	0.43%	0.133	0.45%	0.104	0.35%	
18	N/A	0.013	0.04%	0.039	0.13%	0.032	0.11%	
19	N/A	0.044	0.15%	0.05	0.17%	0.054	0.18%	
20	N/A	0.015	0.05%	0.018	0.06%	0.021	0.07%	
21	N/A	0.013	0.04%	0.012	0.04%	0.01	0.04%	
22	N/A	0.008	0.03%	0.01	0.03%	0.009	0.03%	
23	N/A	0.054	0.19%	0.05	0.17%	0.047	0.16%	
24	N/A	0.006	0.02%	0.009	0.03%	0.009	0.03%	
25	N/A	0.018	0.06%	0.018	0.06%	0.016	0.05%	
26	N/A	0.006	0.02%	0.009	0.03%	0.008	0.03%	
27	N/A	0.005	0.02%	0.009	0.03%	0.008	0.03%	
28	N/A	0.008	0.03%	0.009	0.03%	0.007	0.02%	
29	N/A	0.019	0.06%	0.017	0.06%	0.016	0.06%	
30	N/A	0.004	0.02%	0.008	0.03%	0.008	0.03%	
31	N/A	0.012	0.04%	0.014	0.05%	0.013	0.05%	
32	N/A	0.005	0.02%	0.007	0.02%	0.008	0.03%	
33	N/A	0.004	0.01%	0.006	0.02%	0.007	0.02%	
34	N/A	0.004	0.01%	0.005	0.02%	0.005	0.02%	
35	N/A	0.013	0.05%	0.012	0.04%	0.013	0.04%	
36	N/A	0.003	0.01%	0.006	0.02%	0.006	0.02%	
37	N/A	0.014	0.05%	0.015	0.05%	0.016	0.05%	
38	N/A	0.004	0.01%	0.006	0.02%	0.006	0.02%	
39	N/A	0.004	0.01%	0.005	0.02%	0.005	0.02%	
40	N/A	0.005	0.02%	0.006	0.02%	0.005	0.02%	



41	N/A	0.008	0.03%	0.01	0.03%	0.011	0.04%	
42	N/A	0.003	0.01%	0.004	0.01%	0.006	0.02%	
43	N/A	0.011	0.04%	0.01	0.03%	0.011	0.04%	
44	N/A	0.003	0.01%	0.005	0.02%	0.005	0.02%	
45	N/A	0.004	0.01%	0.005	0.02%	0.005	0.02%	
46	N/A	0.003	0.01%	0.004	0.01%	0.005	0.02%	
47	N/A	0.007	0.02%	0.008	0.03%	0.007	0.02%	
48	N/A	0.003	0.01%	0.004	0.01%	0.004	0.01%	
49	N/A	0.015	0.05%	0.014	0.05%	0.013	0.05%	
50	N/A	0.003	0.01%	0.004	0.01%	0.003	0.01%	

Impédance du coté AC à 175Hz

L'onduleur Delta RPI-M20A présente à 175Hz une impédance de sortie complexe de type $R+jX$:

$$R = 0.07119$$

$$X = -216.5373$$