

Power Savings Analysis

An Exclusive Offer of



ASIAPHIL Manufacturing Industries, Inc.

Power Quality Analysis And Improvements on Existing Electrical Power System

We conduct power system analysis through the aid of our new **POWER NETWORK ANALYZER** that can capture actual data of electrical parameters and waveforms of current and voltage. The data to be captured are the following:

1. Voltage (V) – Average, Maximum, Minimum
2. Current (A) – Average, Maximum, Minimum
3. Active Power (W) – Per Phase, Total
4. Power Factor (PF) – Per Phase, Total
5. Reactive Power Inductive (kVarL) – Per Phase, Total
6. Reactive Power Capacitive (kVarC) – Per Phase, Total
7. Energies (kWhr, kVarLhr, kVarChr) – Per Phase, Total
8. Frequency (Hz) – Per Phase, Total
9. Waveforms (Voltage & Current)
10. Harmonics – Programmable 30th up to 50th

Our equipment has enough memory to store data for the monitoring of a power system like High, Medium, and Low Voltage. The network analyzer is programmable and you can choose what type of application you wanted (Harmonics– Up to 30th or 50th, Disturbance, Flicker, Check Meter).

The electrical parameters and waveforms will be further evaluated based from the standard procedures on power system evaluation after downloading the data to a Personal Computer.

From there, AMII will evaluate data and give you recommendations for the improvement of your existing power system.

For further idea and information, see succeeding pages for samples of captured data:

TABLE OF ELECTRICAL PARAMETERS

Date 01/02/1998 15:36:00		Period: 00:01:00			
	Phase 1	Phase 2	Phase 3	Phase III	
Voltage (V)	230	229	229	229	
Maximum Voltage (V)	231	230	230		
Minimum Voltage (V)	228	228	227		
Current(A)	407	408	422	412	
Maximum Current(A)	410	412	428		
Minimum Current(A)	402	404	418		
Power (kW)	64	67	68	199	
Reactive P. L (kvar)	44	41	45	130	
Reactive P. C (kvar)	0	0	0	0	
Power factor	0.69	0.72	0.70	0.70	
	Active(kWh)	Reactive L(kvarh)	Reactive C(kvarh)		
Energies	48.970	31.985	0.000		
Frequency (Hz)				50	

GRAPH OF WAVEFORMS

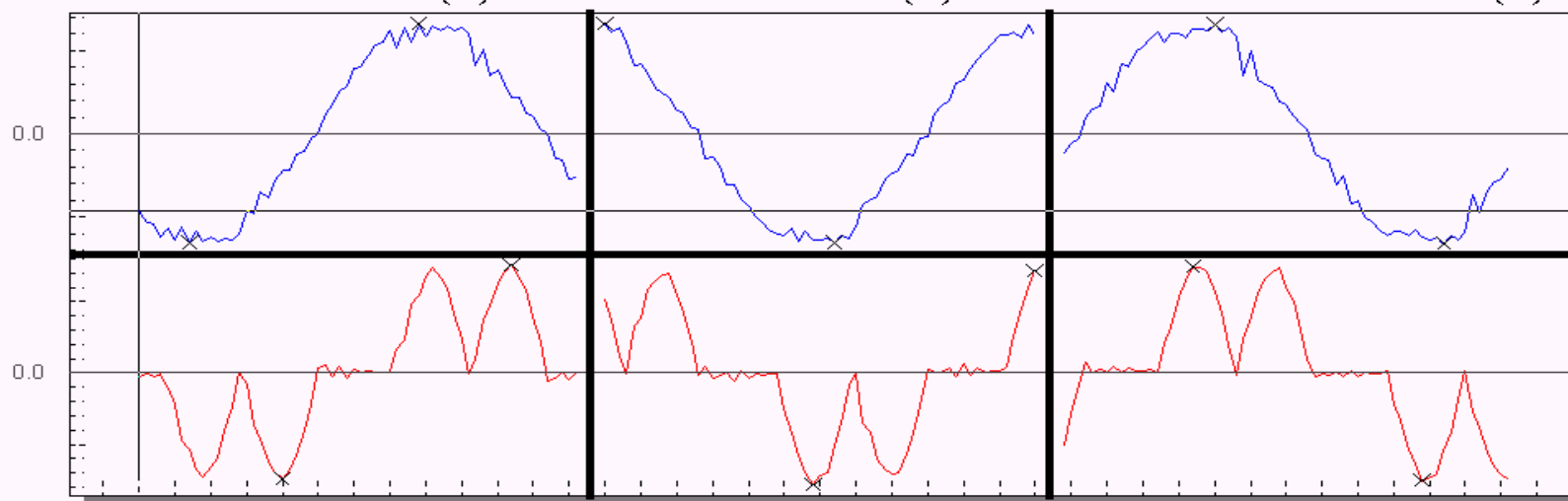
WAVE FORM (Datos.a5i)

[01/02/1998 15:36:00]

Vn F1: 228.5 (V)
THD: 8.4 %
Maximum: 328 (V)
Minimum: -328 (V)

Vn F2: 229.1 (V)
THD: 7.2 %
Maximum: 329 (V)
Minimum: -329 (V)

Vn F3: 226.6 (V)
THD: 9.5 %
Maximum: 328 (V)
Minimum: -330 (V)



In F1: 349.3 (A)
THD: 51.1 %
Maximum: 744 (A)
Minimum: -735 (A)

In F2: 352.8 (A)
THD: 50.1 %
Maximum: 687 (A)
Minimum: -754 (A)

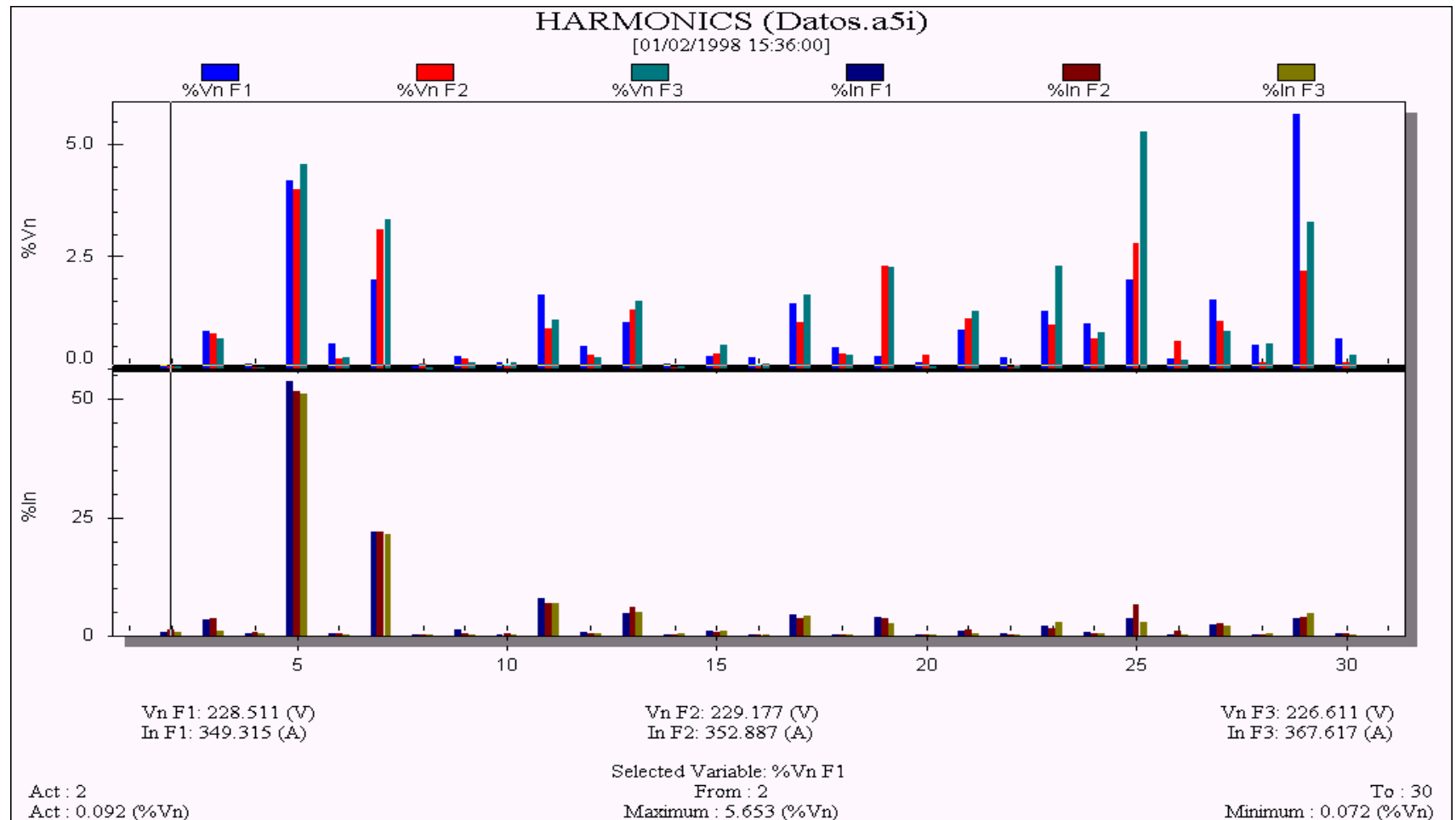
In F3: 367.6 (A)
THD: 49.3 %
Maximum: 744 (A)
Minimum: -754 (A)

Act : -233 (V)

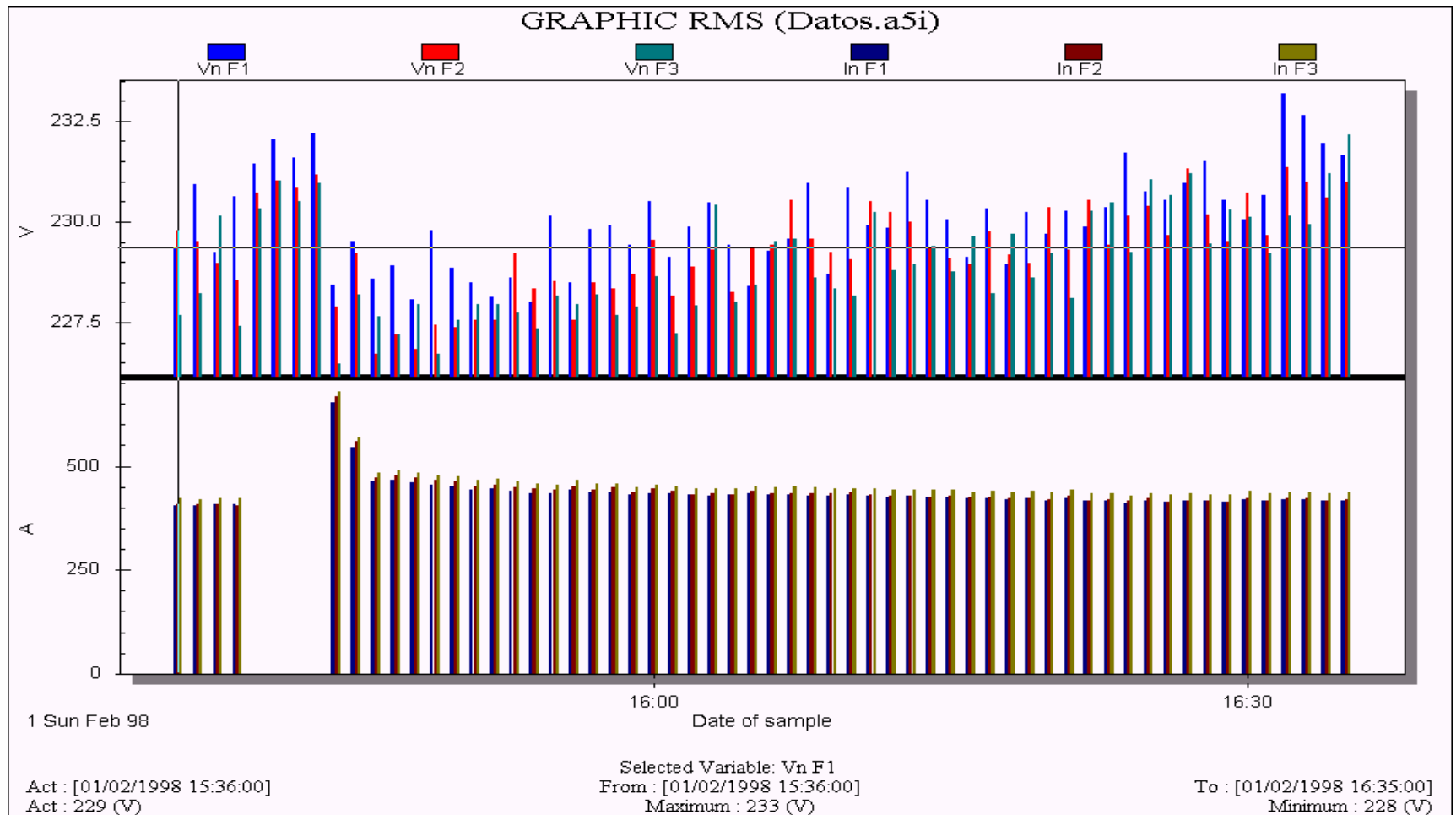
Maximum : 328 (V)

Minimum : -328 (V)

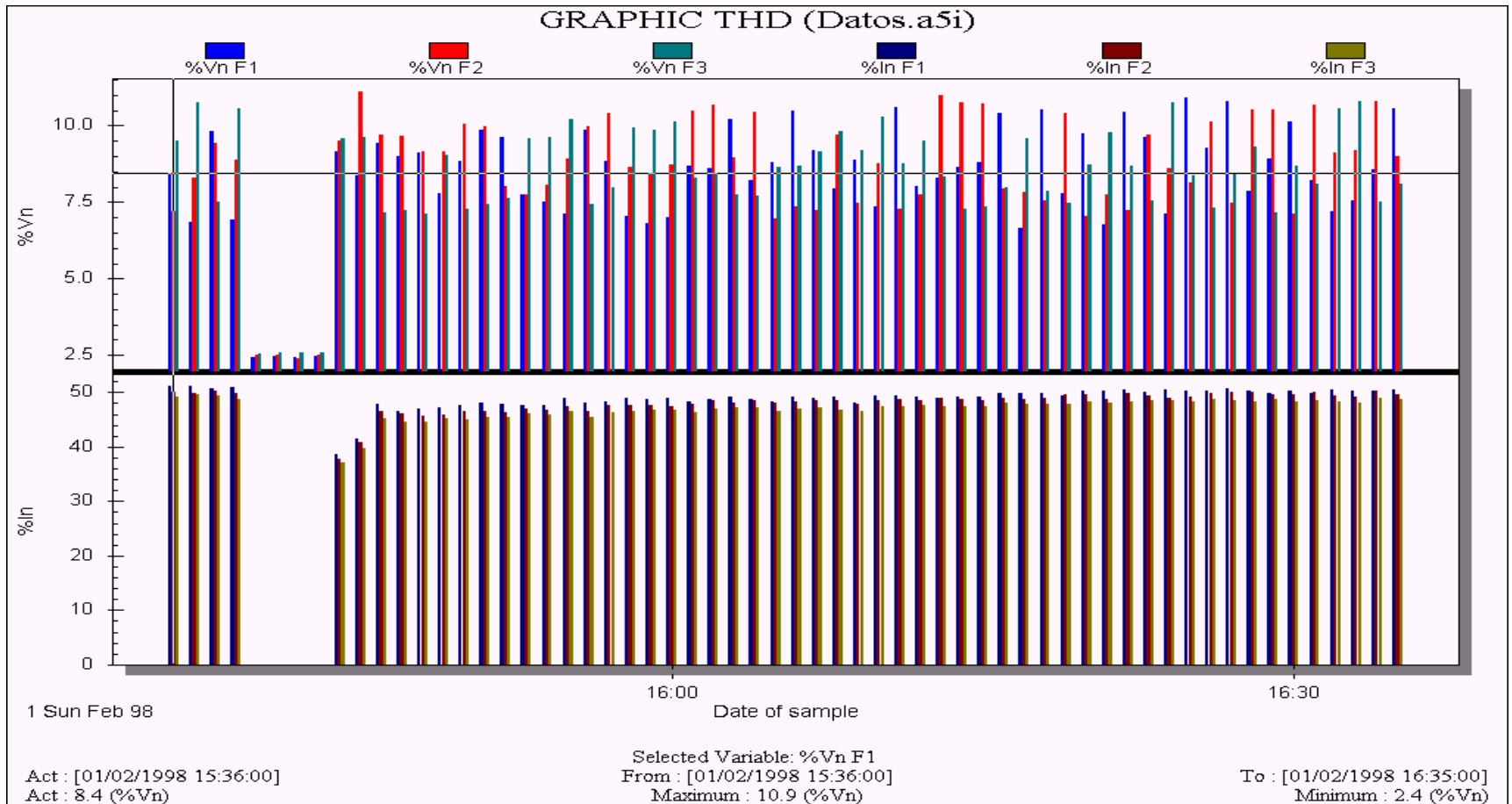
GRAPH OF HARMONICS VALUES



GRAPH OF RMS VALUES

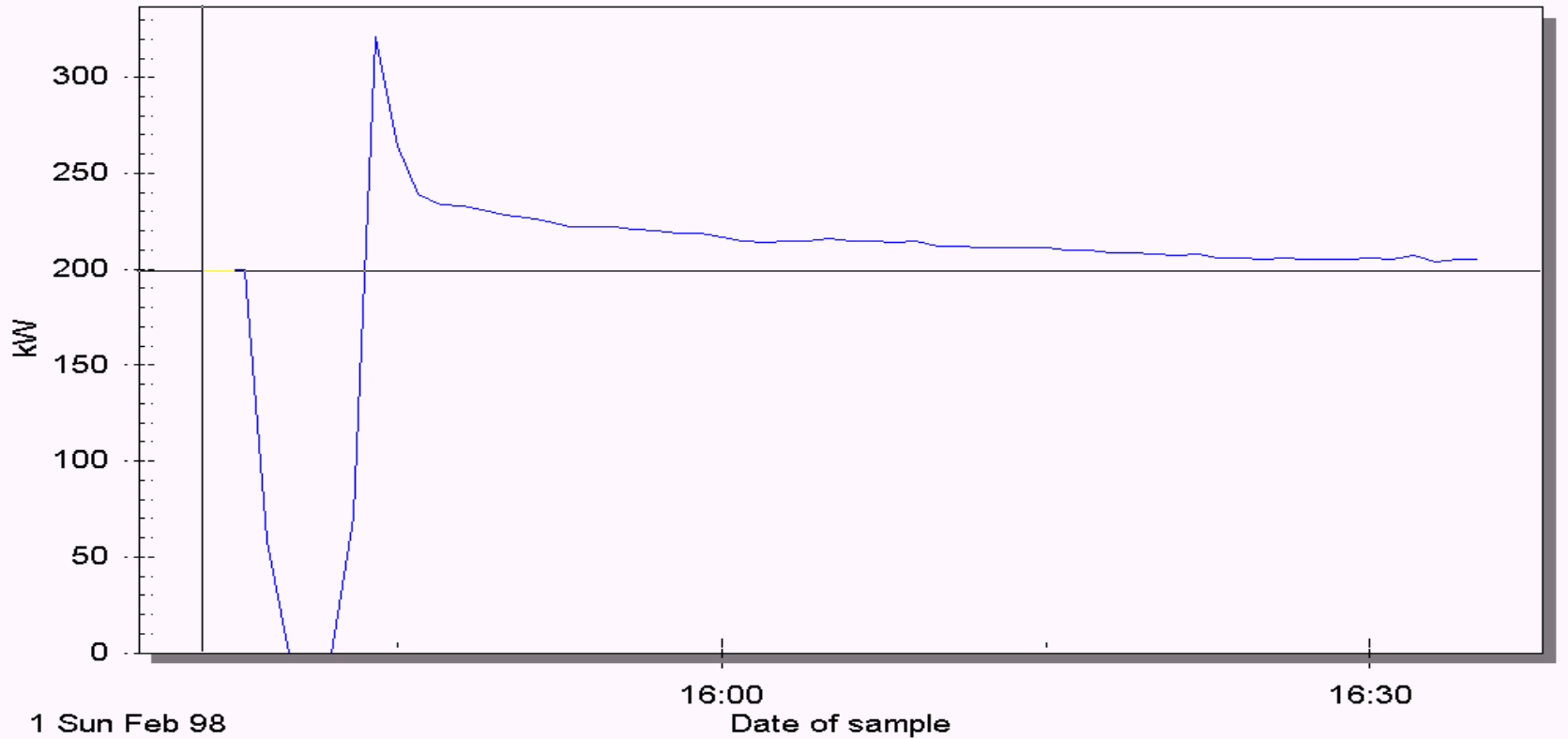


GRAPH OF TOTAL HARMONICS DISTORTION (THD) VALUES



GRAPH OF PEAK DEMAND (KW) VALUES

Datos.a5i (Active power: Phase III +)



1 Sun Feb 98

16:00

Date of sample

16:30

Act : [01/02/1998 15:36:00]

Act : 199 (kW)

From : [01/02/1998 15:36:00]

Maximum : 321 (kW)

To : [01/02/1998 16:35:00]

Minimum : 0 (kW)

TABLE OF HARMONICS VALUES (Fundamental to 16th Harmonics – Phase A)

Date 01/02/1998 15:36:00

Phase voltage1			Phase current1		
Vrms (V):229.35		THD:8.45	Irms (A):406.59		THD:51.15
Fundamental (V):228.51		Disphase (°):224.36	Fundamental (A):349.32		Disphase (°):190.20
Harmonic	Amplitude (%)	Disphase(°)	Harmonic	Amplitude (%)	Disphase(°)
2	0.09	81	2	0.95	305
3	0.84	338	3	3.45	53
4	0.12	23	4	0.55	302
5	4.20	238	5	53.58	177
6	0.56	231	6	0.66	213
7	1.99	6	7	22.10	349
8	0.07	85	8	0.23	188
9	0.28	207	9	1.41	265
10	0.14	49	10	0.44	102
11	1.65	248	11	7.97	9
12	0.50	173	12	0.77	20
13	1.04	1	13	4.79	166
14	0.11	38	14	0.38	7
15	0.29	159	15	1.03	26
16	0.26	353	16	0.31	345

TABLE OF HARMONICS VALUES (16th to 30th Harmonics – Phase A)

Date 01/02/1998 15:36:00					
Phase voltage1			Phase current1		
Vrms (V):229.35		THD:8.45	Irms (A):406.59		THD:51.15
Fundamental (V):228.51		Disphase (°):224.36	Fundamental (A):349.32		Disphase (°):190.20
Harmonic	Amplitude (%)	Disphase(°)	Harmonic	Amplitude (%)	Disphase(°)
16	0.26	353	16	0.31	345
17	1.46	212	17	4.56	184
18	0.47	150	18	0.23	193
19	0.28	242	19	4.07	327
20	0.14	269	20	0.33	164
21	0.86	142	21	1.02	237
22	0.26	303	22	0.51	102
23	1.28	252	23	2.22	3
24	1.00	93	24	0.83	20
25	1.98	348	25	3.85	79
26	0.22	74	26	0.29	312
27	1.54	22	27	2.41	347
28	0.54	286	28	0.40	333
29	5.65	154	29	3.68	172
30	0.67	359	30	0.53	117

TABLE OF HARMONICS VALUES (Fundamental to 16th Harmonics – Phase B)

Date 01/02/1998 15:36:00

Phase voltage2

Vrms (V):229.80

THD:7.22

Fundamental (V):229.18

Disphase (°):104.51

Phase current2

Irms (A):407.89

THD:50.14

Fundamental (A):352.89

Disphase (°):72.94

Harmonic	Amplitude (%)	Disphase(°)	Harmonic	Amplitude (%)	Disphase(°)
2	0.06	328	2	1.38	5
3	0.80	153	3	3.69	259
4	0.02	354	4	0.93	184
5	4.01	229	5	51.62	163
6	0.24	241	6	0.63	278
7	3.11	357	7	22.11	337
8	0.11	200	8	0.28	149
9	0.24	28	9	0.67	61
10	0.09	228	10	0.47	319
11	0.89	225	11	6.84	337
12	0.32	176	12	0.52	35
13	1.30	338	13	6.06	146
14	0.03	249	14	0.28	359
15	0.33	24	15	0.92	268
16	0.09	70	16	0.28	116

TABLE OF HARMONICS VALUES (16th to 30th Harmonics – Phase B)

Date 01/02/1998 15:36:00					
Phase voltage2			Phase current2		
Vrms (V):229.80		THD:7.22	Irms (A):407.89		THD:50.14
Fundamental (V):229.18		Disphase (°):104.51	Fundamental (A):352.89		Disphase (°):72.94
Harmonic	Amplitude (%)	Disphase(°)	Harmonic	Amplitude (%)	Disphase(°)
16	0.09	70	16	0.28	116
17	1.03	188	17	3.84	133
18	0.34	127	18	0.27	207
19	2.28	281	19	3.71	317
20	0.31	170	20	0.17	193
21	1.11	308	21	1.25	42
22	0.04	105	22	0.17	249
23	0.98	91	23	1.67	303
24	0.66	52	24	0.66	340
25	2.79	184	25	6.59	97
26	0.62	56	26	1.11	349
27	1.08	101	27	2.74	202
28	0.13	66	28	0.31	71
29	2.17	169	29	4.07	85
30	0.14	239	30	0.50	73

TABLE OF HARMONICS VALUES (Fundamental to 16th Harmonics – Phase C)

Date 01/02/1998 15:36:00					
Phase voltage3			Phase current3		
Vrms (V):227.69		THD:9.51	Irms (A):422.59		THD:49.31
Fundamental (V):226.61		Disphase (°):345.10	Fundamental (A):367.62		Disphase (°):311.81
Harmonic	Amplitude (%)	Disphase(°)	Harmonic	Amplitude (%)	Disphase(°)
2	0.06	183	2	0.87	102
3	0.67	144	3	1.10	232
4	0.04	175	4	0.49	129
5	4.56	227	5	51.03	169
6	0.26	238	6	0.43	360
7	3.32	11	7	21.40	342
8	0.02	291	8	0.38	253
9	0.15	81	9	0.41	100
10	0.15	274	10	0.36	12
11	1.09	245	11	7.05	349
12	0.25	179	12	0.47	133
13	1.50	344	13	4.97	155
14	0.07	232	14	0.48	72
15	0.52	82	15	1.01	336
16	0.13	157	16	0.35	132

TABLE OF HARMONICS VALUES (16th to 30th Harmonics – Phase C)

Date 01/02/1998 15:36:00

Phase voltage3

Vrms (V):227.69

THD:9.51

Fundamental (V):226.61

Disphase (°):345.10

Phase current3

Irms (A):422.59

THD:49.31

Fundamental (A):367.62

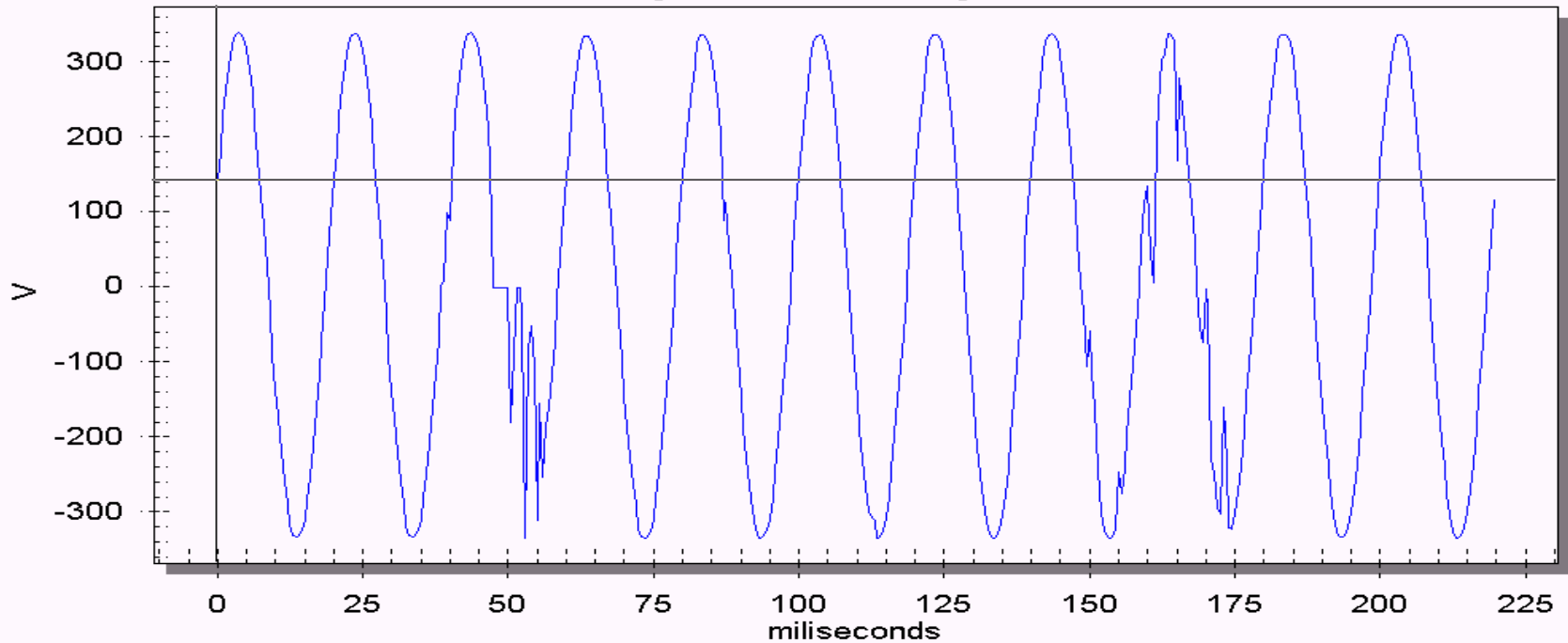
Disphase (°):311.81

Harmonic	Amplitude (%)	Disphase(°)	Harmonic	Amplitude (%)	Disphase(°)
16	0.13	157	16	0.35	132
17	1.66	222	17	4.43	159
18	0.31	153	18	0.42	255
19	2.26	327	19	2.63	316
20	0.07	345	20	0.35	205
21	1.30	13	21	0.68	96
22	0.09	326	22	0.35	309
23	2.28	157	23	2.96	334
24	0.81	60	24	0.62	32
25	5.27	246	25	2.95	172
26	0.19	174	26	0.28	311
27	0.85	258	27	2.16	284
28	0.57	146	28	0.67	66
29	3.26	100	29	4.72	130
30	0.32	332	30	0.16	151

GRAPH OF DISTURBANCE (VOLTAGE SPIKES & DIPS)

Datos.a5d (Disturbances: Single Phase)

[27/07/1998 14:51:06]



Reg: 2/12

Vn: 220 (V)

Trigger: 2

Act : 0.0

From : 0.0

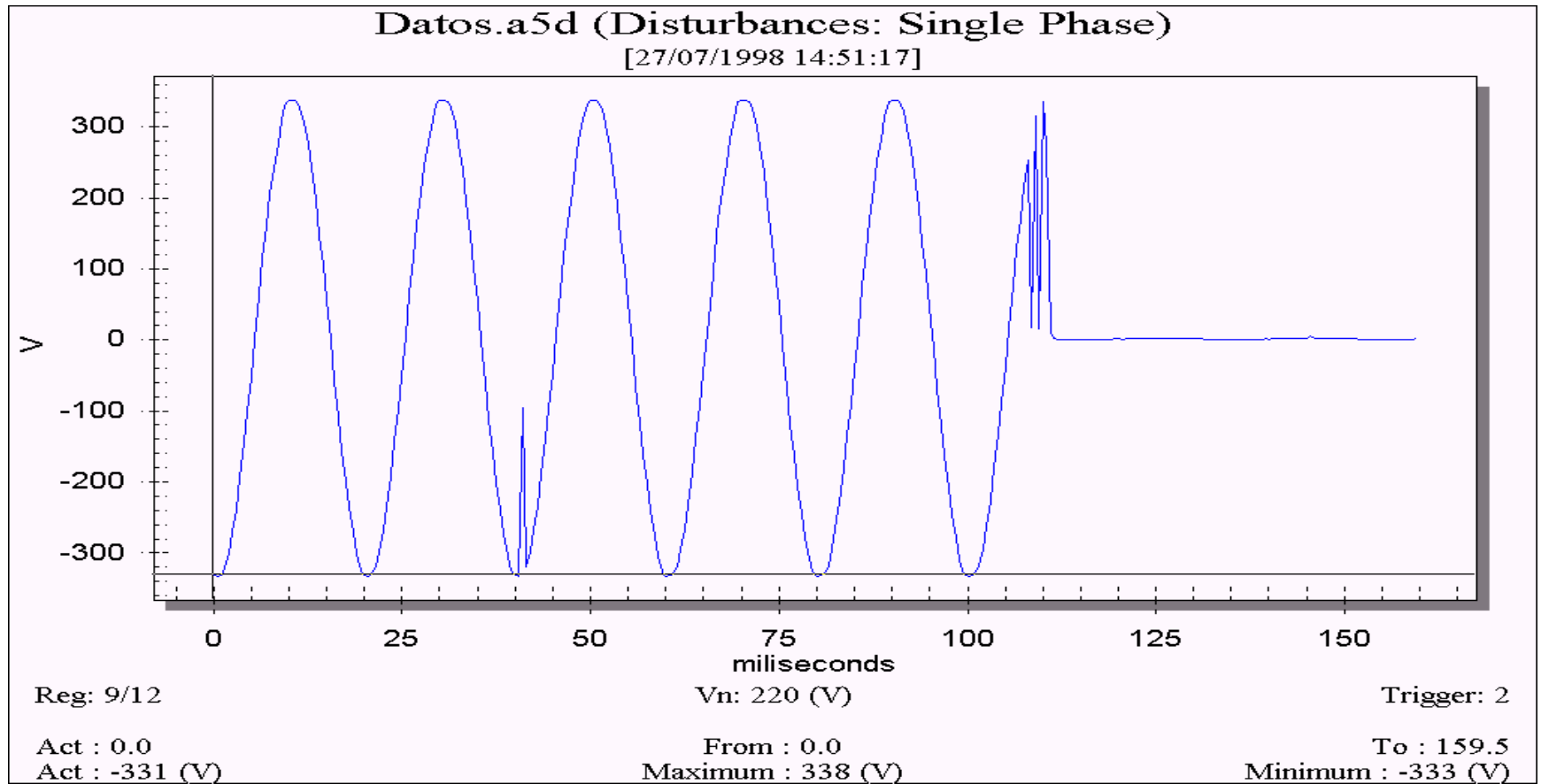
To : 219.5

Act : 143 (V)

Maximum : 340 (V)

Minimum : -335 (V)

GRAPH OF DISTURBANCE (VOLTAGE SWELL & SAGS)



For inquiries, please visit our WEBSITE

www.asiaphil.com

or email us at

write@asiaphil.com