

The Harmonics Analysis Option allows detailed analysis of voltage and current harmonics for the model PS250.

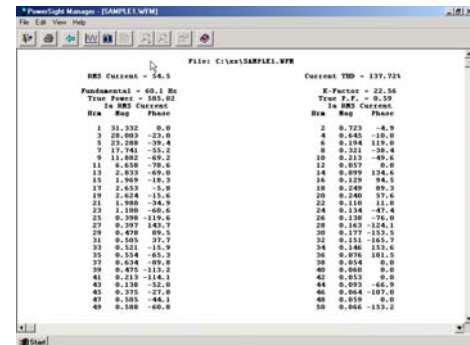
The Importance of Harmonic Analysis

One of the key areas of interest in analyzing power quality is harmonic analysis. A distorted current consists of a current of the fundamental frequency (usually 50Hz or 60Hz or 400Hz) and other currents at frequencies that are multiples of the fundamental. The heating effect of higher frequencies is much greater than for lower frequencies. Therefore, excessive harmonic currents can overheat cables or distribution transformers (K factor is a measurement of this effect). In addition, harmonic currents do not tend to fully cancel out, which can leave large currents flowing in a neutral cable, possibly beyond the rating of the cable. In most areas, utilities are under regulation to provide voltage with no more than a few per cent THD (total harmonic distortion).

Features of HAO

The Harmonics Analysis Option allows PowerSight to do detailed harmonic analysis of voltage and current. When this option is purchased:

- Our PowerSight Manager software will perform harmonic analysis of waveforms to the 50th harmonic and present the results as either a table, including RMS amplitude and phase angle, or graphically as a bar chart. Either presentation may be printed out for reports.
- THD of voltages and currents can be automatically calculated and added to the data log (using the data setup feature) for later graphing and analysis.
- Tabular results in PSM can be displayed either as percent of fundamental or as actual RMS voltages or currents.
- K factor measurements will be displayed by PSM when viewing tabular results.



The screenshot shows a window titled 'PowerSight Manager - [SAMPLE1.WFM]'. It displays harmonic analysis results for current THD. The window is divided into two main sections: 'Current THD = 24.5' and 'Current THD = 137.724'. Each section shows a table of harmonic components with columns for 'Har', 'Mag', and 'Phase'.

Current THD = 24.5			Current THD = 137.724		
Har	Mag	Phase	Har	Mag	Phase
1	101.332	0.0	3	0.723	-8.9
3	28.093	-23.0	4	0.445	-18.0
5	23.288	-39.4	6	0.184	119.0
7	17.741	-55.2	8	0.221	-38.4
9	11.852	-69.2	10	0.213	-49.5
11	6.458	-79.6	12	0.257	0.0
13	2.833	-89.0	14	0.299	124.6
15	1.909	-93.3	16	0.229	94.5
17	2.433	-5.0	18	0.240	89.3
19	2.424	-15.6	20	0.240	57.6
21	1.980	-34.9	22	0.110	11.0
23	1.100	-60.6	24	0.134	-47.4
25	0.789	-81.9	26	0.128	-74.0
27	0.797	-82.7	28	0.163	-124.1
29	0.479	-89.5	30	0.177	-153.5
31	0.360	-91.9	32	0.111	-165.7
33	0.121	-15.9	34	0.146	-153.6
35	0.154	-61.3	36	0.076	101.5
37	0.424	-89.0	38	0.054	0.0
39	0.475	-115.2	40	0.040	0.0
41	0.213	-114.1	42	0.053	0.0
43	0.130	-52.0	44	0.073	-64.0
45	0.275	-27.0	46	0.064	-107.0
47	0.165	-64.1	48	0.059	0.0
49	0.180	-60.0	50	0.046	-153.2

Availability

The HAO option for the PS250 is available for immediate purchase from Summit Technology Inc. To order, specify **HAO**.

PowerSight® products are manufactured in the USA and sold by Summit Technology, Inc.

For more information on our products contact:

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