

THREE-PHASE POWER QUALITY ANALYZER

PowerPad™ Model 3945



Figure 1. PowerPad™ Model 3945

I. General Layout & Functionality

- a) The PowerPad™ has been laid out with ease of use and maximum functionality in mind. Looking at the top of the

unit from left to right, the unit has **three color-coded current inputs**  (A Phase, B Phase,

and C Phase) and **four color-coded voltage inputs**  (A Phase, B Phase, C Phase, and Neutral) **(Figure 1, bullet 1)**. One thing to note is that the Current Probes are intelligent. The unit auto-detects and auto-configures itself according to which probes are connected to it.

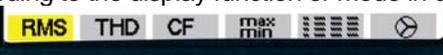
- b) Just to the right of the display on the right-hand-side is an **optically isolated RS-232 port**  **(Figure 1, bullet 2)**. This allows the user to simultaneously connect to a power panel and the computer without the danger due to an accidental fault.

- c) Just below the RS-232 port is a **power port**  **(Figure 1, bullet 4)**. This supplies power to the unit and charges the internal NiMH battery pack. The battery pack has a 10-hour continuous operational capacity and a 96-hour record mode capacity can be charged at any level of discharge. Power to this port can be 120/240V, 50/60Hz. PowerPad™ can be used while charging.

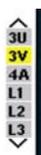
- d) There are **four operational menu buttons**  (light gray buttons) located on the lower left front panel. **(Figure 1, bullet 10)** From top-to-bottom they are SETUP , SNAPSHOT , PRINT , and HELP .

The blue buttons on the bottom right are the **MAIN MODE function buttons** . **(Figure 1, bullet 9)**

From left-to-right and then top-to-bottom they are: TRANSIENT MODE , HARMONIC MODE , WAVEFORM MODE , ALARM MODE , RECORDING MODE , and POWER/ENERGY MODE .

- e) There are **six sub-menu buttons**  just below the screen **(Figure 1, bullet 6)**. These allow the user to choose the sub-menus available in a particular menu mode. The function for each of these buttons change according to the display function or mode in use. The sub-menus available in the waveform mode for example are  **(Figure 1, bullet 5)**

- f) The **arrow keys**  allow the user to move within the menus such as the side-bar menu seen on the

right-side of the display  **(Figure 1, bullet 3)**

- g) The **enter button**  allows the user to choose and enter changes to the setting within the menus. **(Figure 1, bullet 7)**

II. Setup

- a) Once the unit is turned ON, by pressing the green button  (Figure 1, bullet 11) in the bottom-left-hand corner, the unit powers up and defaults to the Waveform Mode  59.99Hz showing the waveform icon and

frequency. This function is the top-right of the six blue main mode function buttons  (Figure 1, bullet 9). Date, time and battery capacity are displayed in the top-right-corner of the screen

04/17/03 10:32  100%

- b) The user can depress the SETUP button , the top button on the left side, to configure the instrument (Figure 1 bullet 10). There are 11 options in the setup. One option to note is the Electrical Hookup. Use the down arrow keys  (Figure 1, bullet 8) to scroll down to the desired function and press the ENTER key  (Figure 1, bullet 9). You should see a screen similar to Figure 2. Figure 3 shows the example of the screen seen while configuring the instrument using the DataView® software.

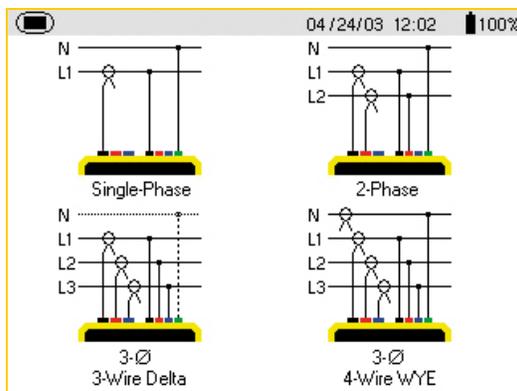


Figure 2. PowerPad™ setup screen

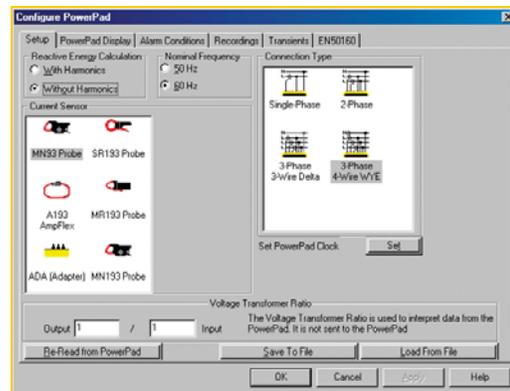


Figure 3. DataView® setup screen

To change the setup using the panel, simply scroll through the options using the arrow keys  (Figure 1, bullet 8) and pressing the ENTER key  (Figure 1, bullet 9) when the desired function is highlighted.

III. Operational Examples

a) Assuming that the unit was connected using a 4-wire WYE setup to a three-phase circuit, scrolling through the



OPERATIONAL menu buttons (blue buttons) (Figure 1, bullet 9) (from left to right) would result in the following screens examples. Note: Alarms example is not shown.

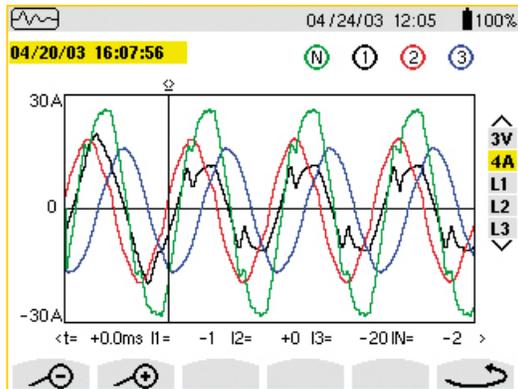


Figure 4. A captured transient example

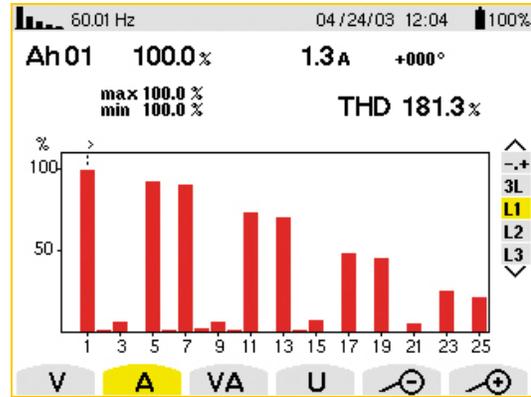


Figure 5. Current harmonics in real-time

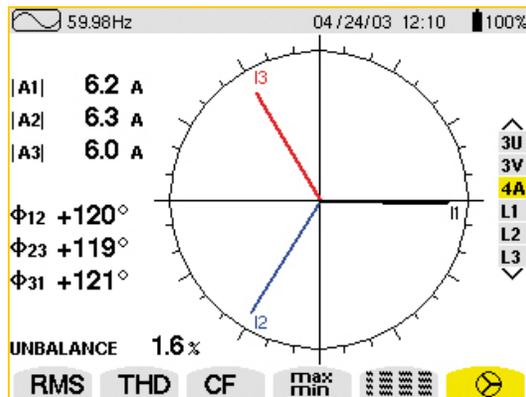


Figure 6. Real-time vector diagram of current

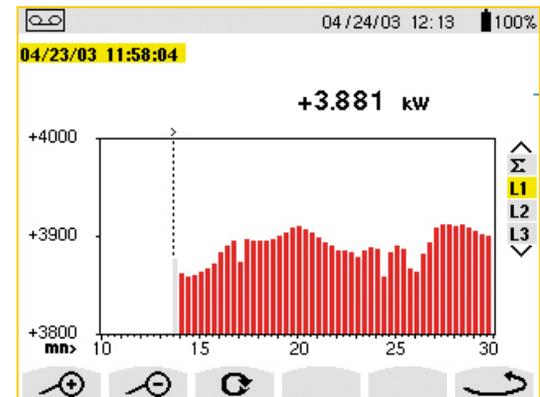


Figure 7. Trend data of wattage consumed

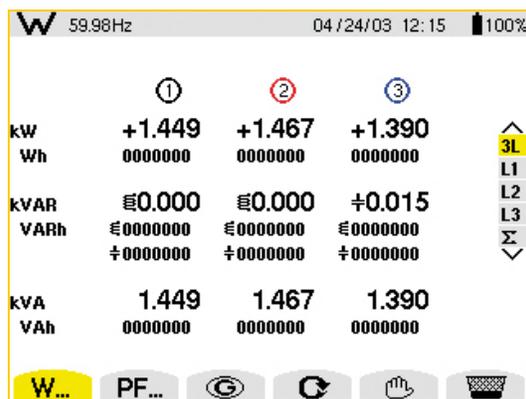


Figure 8. Accumulated data for W, VA, Vars

IV. Additional Information

The PowerPad™ is a stand-alone unit that comes standard with the DataView® software. The unit can be remotely controlled using the software for operation and configuration. The DataView® software adds a significant amount of power and versatility to the unit. It also features automatic report generation that allows the user to **go from data download to report in three mouse clicks**, using the factory supplied templates. The user can also create custom templates to meet the needs of the application.

Each unit comes fully equipped with all the accessories needed. Users choose a particular package depending on which current probes that they would like to use with their unit.

WHAT'S INCLUDED

- Instrument with soft carrying pouch
- RS-232 DB9F optically coupled serial cable
- DataView® Professional software
- Set of four color-coded 10 ft voltage leads
- Set of four color-coded alligator clips
- Set of three color-coded current probes (choose from multiple types)
- Carrying bag
- NiMH battery
- US 120V power cord
- User Manual



Ordering Information

PowerPad™ Model 3945 with MN93

Includes meter, set of (3) 240A MN93 probes, (4) 10 ft color-coded voltage leads, (4) color-coded alligator clips, RS-232 DB9F optically coupled serial cable, NiMH battery, US power cord, DataView® Professional Software, carrying bag, soft carrying pouch and user manual.

Cat. #2130.75

PowerPad™ Model 3945 with SR193

Includes meter, set of (3) 1200A SR193 probes, (4) 10 ft color-coded voltage leads, (4) color-coded alligator clips, RS-232 DB9F optically couple serial cable, NiMh battery, US power cord, DataView® Professional Software, carrying bag, soft carrying pouch and user manual.

Cat. #2130.76

PowerPad™ Model 3945 with AmpFlex™ 193-24

Includes meter, set of (3) 6500A 24" AmpFlex™ 193-24 probes, (4) 10 ft color-coded voltage leads, (4) color-coded alligator clips, RS-232 DB9F optically coupled serial cable, NiMh battery, US power cord, DataView® Professional Software, carrying bag, soft carrying pouch and user manual.

Cat. #2130.77

PowerPad™ Model 3945 with AmpFlex™ 193-36

Includes meter, set of (3) 6500A 36" AmpFlex™ 193-36 probes, (4) 10 ft color-coded voltage leads, (4) color-coded alligator clips, RS-232 DB9F optically coupled serial cable, NiMh battery, US power cord, DataView® Professional Software, carrying bag, soft carrying pouch and user manual.

Cat. #2130.78

Accessories

Set of three, MN93 probes (240A)

Cat. #2140.09

Set of three, SR193 probes (1200A)

Cat. #2140.10

Set of three, 24" AmpFlex™ 193-24 probes (6500A)

Cat. #2140.11

Set of three, 36" AmpFlex™ 193-36 probes (6500A)

Cat. #2140.12

Set of three, MR193 probes (1000AAC/1400ADC)

Cat. #2140.13

Set of three, MN193 probes (6A/120A)

Cat. #2140.14

5A Adaptor box

Cat. #2140.17



AmpFlex™ 193 probes (6500A)
(available in 24" and 36" lengths)



MN93 probes (240A)
or MN193 probes (6A/120A)



SR193 (1200A)



5A Adaptor Box



Call the AEMC® Instruments Technical Assistance Hotline for immediate consultation with an applications engineer: (800) 343-1391

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