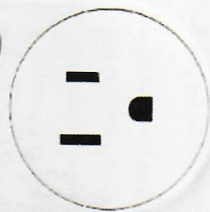




User Manual



Model No: PN2000

Thank you for purchasing the **Electricity Usage Monitor** by Portie. Please read this manual carefully before using this product.

Note: Remove the soft protective film (if any) on the screen. The film itself may seem like it has some scratches, but you can peel it off if needed.

Overview

The PN2000 can measure **Watts** (active power), **Current** (true RMS), **Voltage** (true RMS), **Frequency**, **Cumulative Time** (CT with power off memory), **Electricity Consumption** (EC with power off memory) and **Power Factor** (as Watts/Vrms*Arms).

How to calculate your dollar cost of energy consumption over a period?

Plug the PN2000 into the power socket, and then plug the appliance to be tested into the monitor. It will start measuring kilowatts used over time.

For instance, you get a total use of **EC- Kilowatt-Hours (kWh)** over 24 hours for an appliance and you can just multiply it by your **Cost per kWh** your local utility charges you on your bill. Then you will know the daily cost. Similar ways to calculate your electrical expenses by the Day, Week, Month or Year.

Note: Some utilities charge two or more rates depending on consumption, time of day or season. Use the rate that more closely reflects your actual use patterns,



Warning

To avoid electric shock or personal injury, read the "Safety Information" carefully before using the Monitor.

Safety Information

1. Before using this product, check the shell for cracks or shortage of plastic parts, pay attention to the insulation around the connector. Do not use if damaged.
2. **DO NOT** overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
3. **DO NOT** use for long periods near the maximum rated current (in most cases, the true RMS current will be around 15A) to avoid any unnecessary damage or accident.
4. **DO NOT** use or store in high temperature, damp, inflammable and explosive places. The performance of the instrument may be degraded by dampness.
5. **DO NOT** allow children to operate this device, keep children away from the monitor.
6. **NOTE:** The monitor work with standard AC power, an inferior quality power supplies (with large harmonic distortion) such as unqualified inverter may cause damage or shorten device's lifespan.

LCD display

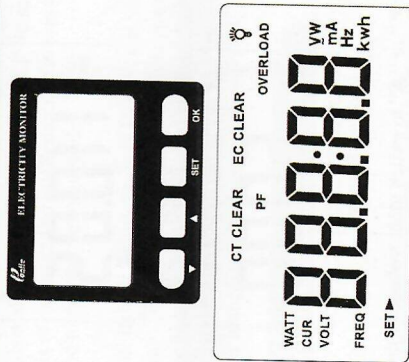


Figure 1

1. There are four functional keys on the product "▼", "▲", "SET" & "OK"

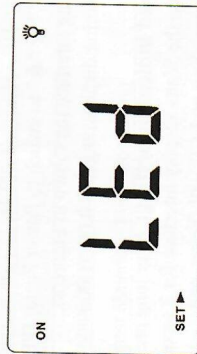
2. LCD display is shown as above.

Operating instructions

1. Device Startup/Shutdown

Plug the monitor directly into the power socket and connect to AC power to start the device; disconnect the power supply to shut down

2. Backlight Setting



Press "▼" or "▲" button until switched to the EC monitoring interface (as shown in figure 2) and the CT monitoring interface (as shown in figure 3), and

Under the "CUR" display, press "SET" key for 2 seconds to enter the backlight setting. After entering the interface, "LEd" is displayed, and the "ON or OFF" is flickering (as shown in Figure 1). At this time, you can select to "ON or OFF" by pressing "▼" or "▲" key, after selection, press the "OK" key to exit setting. "OFF" means that the backlight will turn OFF automatically when the device is not operated by the keys within 10 seconds (factory setting for fault); ON" means the backlight is always on.

3. Measurement display

① Measurement mode

Under measurement mode you can freely check Current, Voltage, active power Watts, Frequency, Kilowatt-Hours (EC), Cumulative Time(CT) and Power Factor(PF) by pressing "▼": WATT→CUR→VOLT→FREQ→CT→EC→PF. And press "▲" the checking sequence will be reversed.

② Kilowatt-Hours (EC) & Cumulative Working Time (CT)

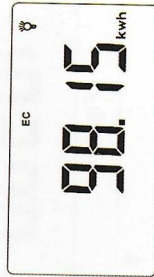


Figure 2

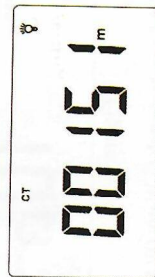


Figure 3

the measurement display range is 0.00-99999KWH and 0-99999 minutes respectively. The measured power consumption will be automatically stored and will not be lost even after a long period of power failure, which is good for circuits that lose power.

Note: CT do not means the elapsed time on PN2000 model, it is calculated only when there is load (cumulative working time of testing appliance).

How to clear EC and CT data?

Press "▼" or "▲" button until switched to EC and CT monitoring interface. Press & Hold "SET" key for 2s, the cumulative electricity consumption value and time will flicker. Press "OK" to reset.

③ Watts and Current



Figure 4



Figure 5

Press "▼" or "▲" key to switch to Watts (WATT) monitoring interface (as shown in figure 4) and Current (CUR) monitoring interface (as shown in figure 5), the measurement display range should be above 0.20W and 1.000-16.000A (It displays mA when under 1A).

④ Voltage and Frequency



Figure 6



Figure 7

Press "▼" or "▲" to switch to the voltage (volt) monitoring interface (as shown in Figure 6) and frequency (FREQ) monitoring interface (as shown in Figure 7). The measurement display range is 100-240.0 v and 40.00-60.00Hz respectively.

⑤ Power Factor and Overload Indication

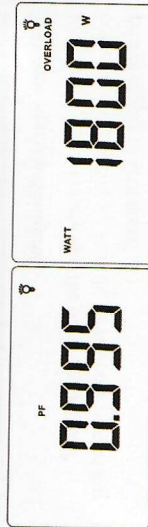


Figure 8

Figure 9

Press "▼" or "▲" to switch to Power Factor (PF) monitoring interface (as shown in Figure 8), the measuring display ranges is 0.001-1.000.

Overload indication setting: After long pressing "SET" on the Watts display interface for 2 seconds, the thousand-digit on LCD will flicker, and

then enter the overload indication limit setting. Press "▼" or "▲" to adjust the value, after finishing the thousands of digits adjustment, press "SET" to set the hundreds of digits, and so on. Remember to press "OK" at the end to exit the Settings mode.

Note: The default factory value is 1800W, and you can set the limit yourself if necessary. When the power of the appliance exceeds the set limit, the backlight flashes to indicate overload (as shown in Figures 9). Please turn off the power immediately and remove testing appliance.

General Specifications

Power Input	100-240V 50/60Hz
Maximum rated current	16A
Maximum power	1760W(@110V) / 3520W(@220V)
Measurable range	0.20W>
Maximum electricity consumption(EC)	99.999 kWh
Maximum cumulative time(CT)	99.999 minutes
Power factor	0.001-1.000
Backlight function	10s Auto off (ON/OFF can be set)
Accuracy standard	Class 1.0
Resolution	0.01W, 0.001A, 0.01V
Power dissipation	<1.00W
Working temperature	0~45°C
Storage temperature	-20~60°C
Inner & outer Material	ABS fireproofing