

Watts up?

Watts up?
Electricity
Meter

Operator's
Manual

Thanks for purchasing *Watts up?*
We hope you find it useful and
enlightening. The following are
step-by-step instructions.

The annual consumption of appliances can
be calculated by first measuring the device with
Watts up? for a 24 hour period. Then multiply the dollar amount displayed
(step 1) by 365 to get an annual dollar amount. Sample consumption and
costs for typical appliances are shown in the chart below.



| Appliance | Wattage | Daily Cost | Monthly Cost | Annual Cost |
|--------------------------------|-----------|------------|--------------|-------------|
| Refrigerator | 250 watts | \$.25 | \$7.50 | \$90 |
| Computer | 60 watts | \$.12 | \$3.46 | \$41 |
| 100 watt bulb on 12 hrs/day | 100 watts | \$.10 | \$2.88 | \$35 |

WATTS UP?

STEP 1 - DOLLAR MODE:

Plug *Watts up?* into a standard 120 volt AC wall outlet. The meter will turn on automatically in the dollar mode (signified by the dash on the left side in the display that now lines up with the \$ symbol). *Watts up?* will always display ".000" when first plugged in. This mode displays the amount of money consumed by whatever has been plugged into *Watts up?* since the meter was plugged in or last reset. Tenths of a penny are initially displayed, so ".001" means 1/10 of a penny. ".234" means 23 and 4/10's cents. "1.24" means one dollar and 24 cents.

STEP 2 - WATTAGE MODE: * (Means 75 watts)

Press the MODE button. The wattage mode (signified by the dash on the left side in the display that now lines up with the KW symbol) is the next mode after the dollar mode. The display now indicates the instantaneous wattage currently being consumed by whatever is plugged into the meter. If nothing is plugged into the meter the display will read zero. Kilowatts (1 kw = 1000 watts) are displayed so ".075" means 75 watts, ".125" means 125 watts, and "1.25" means 1250 watts.

STEP 3 - TIME MODE: * (Means 2 hours)

Press the MODE button again. The time mode (signified by the dash on the left side in the display that now lines up with the HR symbol) is the next mode after the wattage mode. The display now indicates the elapsed time since the meter was plugged in or last reset.

| | |
|-------------|----------------------------------|
| 0:01 — 9:59 | 1 SECOND — 9 MINUTES, 59 SECONDS |
| 0:10 — 9:59 | 10 MINUTES — 9 HOURS, 59 MINUTES |
| 10.0 — 999 | 10 HOURS — 999 HOURS |

STEP 4 - KW HR MODE: * (Means 0.15 kilowatt hours)

Press the MODE button again. The kw hr mode (signified by two dashes on the left side in the display that now line up with the HR and KW symbols) is the next mode after the time mode. The display now indicates the cumulative kilowatt hours consumed by whatever has

* The graphics in steps 2-4 are examples that apply to measuring a 75 watt light bulb for 2 hours.

been plugged into *Watts up?* since the meter was plugged in or last reset. Kilowatt hours (1 kw hr = 1000 watt hours) are watts multiplied by time. For instance, a 150 watt bulb plugged in for 1 hour has consumed 150 watt hours. In two hours, it has consumed 300 watt hours. So, if the display shows ".075" it means 75 watts hours, ".125" means 125 watt hours, and "1.25" means 1.25 kilowatt hours.

Pressing the **MODE** button toggles the display back through these same 4 modes, always in the same order. If you get confused, simply press the MODE button repeatedly until you get to the dollar mode, as signified by the dash on the left side in the display lining up with the \$ symbol. Or simply unplug *Watts up?* momentarily and plug it back in. The display will now be in the dollar mode.

RESET: Press and hold the **SET** button while in the time mode (step 3) to reset back to zero the time, kilowatt, and dollar values. *Watts up?* can also be reset by unplugging it briefly.

SET BUTTON – RATE MODE: * (Means 8c per kilowatt hour)

The SET button is only used for reset (described above) and to change the rate from the default setting of \$0.08 per kilowatt hour, to whatever it is in your local area. Look on your utility bill and divide the cost for electricity by the number of kilowatt hours consumed. To change the rate in *Watts up?*, go to the dollar mode (step 1). Press and hold the SET button until the display changes to .080 with three dashes on the left of the display that now line up with the \$, HR and KW symbols. Press the SET button to increment the rate. Holding the SET button increments the rate faster. After the rate has been changed, press the MODE button twice to get back to the dollar mode.

Technical Specifications

- 120 VAC, 60 Hz, 12.5 amps
- Accuracy is +/- 5%, for loads above 20 watts
- Input is via 6' electric cord, output is via outlet on top of meter
- Indoor use only
- Altitude up to 2000 meters / Temperature 5°C to 40°C
- Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C
- Mains supply voltage fluctuations not to exceed +/- 10% of the nominal voltage
- Installation Category II / Pollution Degree 2
- Dimensions: 7" x 4" x 2" (18cm x 10 cm x 5cm)
- Weight: 1.5 lbs (0.7 kg)
- UL listed 3111-1

FAQ: please see the website for an updated list.

Q: Can devices that consume less than 20 watts be measured accurately?

A: Yes, plug the device into a power strip, along with a larger device such as a 60 watt lamp. Plug the power strip into *Watts up?* and measure the load with both devices on. Now turn off the small device (not the lamp), and subtract the displayed load from what was originally displayed. This difference is an accurate measure of the small device.

Q: Is power factor measured accurately?

A: Yes, *Watts up?* measures both the current and voltage thousands of times per second so out of phase loads are measured accurately.

Q: Are non-sine wave loads measured accurately, such as those from solar powered inverters?

A: Yes, *Watts up?* measures both the current and voltage thousands of times per second so non-sine wave loads are re measured accurately.

Q: Nothing is displayed when I plug in *Watts up?* What's wrong with my meter?

A: Plug something in and see if the device works. If the appliance you plugged in doesn't operate, check the circuit breaker on the back of *Watts up?*

Cleaning

Watts up? may be cleaned using a soft dry towel. Do not use liquids to clean. Do not disassemble. There are no spare parts. No preventative maintenance is required. If the case breaks or other physical damage is apparent, do not use.

Warning

Watts up? is not a toy and is only intended for use by people over the age of 10. Never open the case or puncture the plastic overlay above the LCD. Shock hazard exists. *Watts up?* is not water resistant. As with all electronic equipment, avoid water and liquids. Do not touch *Watts up?* if it is wet. *Watts up?* is not repairable. If the meter is used in a manner not specified herein, the protection provided by the meter may be impaired.

Warranty

Watts up? is guaranteed for 12 months from date of purchase. If a problem arises, simply return the meter to the place of purchase, along with proof of purchase, for a new meter or credit. For technical assistance or repair, please call:

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303.282.6410 fax: 303.282.6411 www.doublelead.com
toll free: 877.WATTS01 (877.928.8701)

Electronic Educational Devices believes it is everyone's responsibility to help the environment. In this effort, e.e.d purposefully uses recycled components wherever possible and minimizes extraneous packaging. We hope that using *Watts up?* helps people understand the costs involved with electricity, and thereby encourages conservation and participation in environmental issues.

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