

## Power (kW, kWh, Watt) Monitoring Equipment

Monitoring electrical power consumption is key to understanding how your equipment and buildings are using energy. Whole-building power monitoring using WattNodes will show how much energy is being used when the building is unoccupied, if there are large peaks that contribute to high demand charges, and in general, when power is being used. Once you know more about your energy usage, you can often take easy steps to reduce demand and substantially reduce demand charges. Similarly, by knowing about off-hours energy usage, you can start to turn off unneeded loads and save energy and money.

**Monitoring Power** – To monitor power (kW or kWh), there are a number of factors to take into consideration.

- You will need to know whether the system you want to monitor is of a Delta or Wye configuration.
  - A Delta configuration has no neutral leg and is called 3-wire.
  - A Wye configuration has a neutral leg and is called 4-wire.
- You will need to know the voltage of the system you want to monitor.
- You will need to know the rated amperage of the system.

Most monitoring of power occurs with a 15-minute sample interval. This is because utility data also is tracked at 15-minute intervals. Recording power readings at the same interval as utility readings permits a double check on utility data accuracy. It also permits you to view load profiles before utility billing occurs so that you might be able to reduce loads / demand and also reduce energy costs based on peak load billing.

See the next page to determine what equipment will be needed for you to monitor power.

### QUESTIONS:

- Is it 208V or 480V service?
- Is it a Delta (or 3-wire) configuration? If so, see Option A.
- Is it a Wye (or 4-wire) configuration? If so, see Option A or B.
- What is the maximum amperage of each hot wire (for CT sizing)?

## Option A

### WattNode “B” Model Three Phase, 3-Wire Panel (no neutral line)

Item Description	Qty	Part Number(s)
Wattnode (208/240V or 480V)	1	WNB-3D-240-P or WNB-3D-480-P
Pulse Input Adapter	1	S-UCA-M002 or S-UCC-M002
Current Transformers	3	Current Transformers, CTS-xxxx-yyy or CTP-xxxx-yy
Voltage Lead Set	1	WNB-LEAD-SET

- Due to the flexible nature of the WattNode “B” Models, we stock only the Delta models (WNB-3D-240-P and WNB-3D-480-P) since they work in Wye systems. For the price of one Delta WattNode, you get the functionality of two WattNodes.

## Option B

### WattNode “B” Model Three Phase, 4-Wire Panel (has a neutral line)

Item Description	Qty	Part Number(s)
Wattnode (208V or 480V)	1	WNB-3Y-208-P or WNB-3Y-480-P
Pulse Input Adapter	1	S-UCA-M002 or S-UCC-M002
Current Transformers	3	Current Transformers: CTS-xxxx-yyyy or CTP-xxxx-yy
Voltage Lead Set	1	WNB-LEAD-SET

- Due to the flexible nature of the WattNode “B” models, we stock only the Delta models (WNB-3D-240-P and WNB-3D-480-P).
- The WNB-3Y-208-P and WNB-3Y-480-P models, although not stocked, can be ordered with a minimal delivery delay. We recommend WNB-3Y-208-P be used for lighting load data collection.

### Power Measurement Notes:

- CTS-xxxx-yyy refers to Current Transformers where “xxxx” indicates opening size (0750 = 0.75”, 1250 = 1.25”, and 2000 = 2.0”) and “yyy” indicates rated amperage.
- CTP-xxxx-yy refers to Current Probes (clamp-on style) where “xxxx” indicates rated amperage and “yy” indicates specific model.
- For both sets of equipment, the WattNode transducer connects to the logger using the Pulse Input Adapter.
- The Current Transformers / Current Probes wire into the WattNode transducer.
- A voltage connection also is made to the WattNode transducer. This can be done with voltage lead set available for both “B” model WattNode transducers.
- Additional or replacement terminal blocks are available for the WattNode transducers should originals be damaged in any way.

### Basic Logger Equipment

The list below consists of the basic equipment that you'll need to do any data logging:

- Energy Logger Pro,
- Serial cable to program the logger and download data,
- AC power adapters to keep the logger plugged in to an AC outlet, and
- HOBOWare software.

Item Description	Qty	Part Number(s)
Energy Logger Pro	1	H22-001
Serial interface cable	1	CABLE-PC-3.5
AC Power Adapter	1	PAC-1 or ONS-AC-POWER-USA
HOBOWare Pro version 2.2 or Higher	1	BHW-PC or BHW-MAC

**NOTE:** Reference materials for all equipment used in monitoring applications should be reviewed to ensure proper use and safety precautions are observed.