Honeywell
THE POWER OF CONNECTED

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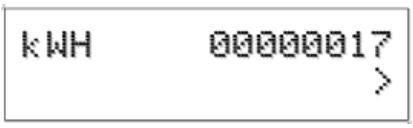
Class 1000 & 2000 Installation Verification

This document applies to Honeywell E-Mon Class 1000, 2000 and Green Class 2000 meters manufactured from the year 2012 to 2018. First two numbers of the serial number is the year code, for example 12 is the year 2012, 13 = 2013, 14 = 2014, 15 = 2015 to present year 18 = 2018.

Verification of meter installation accuracy with real time LOAD KW screen (figure 1).

Figure 1 LOAD KW (present load in Kilowatts)

Figure 2 kWh (Kilowatt hours)



1. Use a Clamp on Amp Probe read the amps of each phase conductor being monitored by the Honeywell E-Mon meter. In this example the clamp on amp probe readings are:

- A Phase: 10.1 Amps
- B Phase: 9.0 Amps
- C Phase: 12.0 Amps

2. Calculate average amps. Total of above amps equals 31.1 amps. Divide 31.1 by 3 equals 10.36 average amps.

3. Calculate kW. Take the average amps (10.36 amps) and multiply it by the voltage (in this example we will use 480 volts) 480 X 10.36 = 4,972.8.

4. For three-phase meters only multiply by 1.732 = 8,612.8 watts.

5. Divide watts by 1000. 8,612.8 watts divided by 1000 = 8.612 kilowatts.

6. Result installation passes as calculated 8.6 kW Load kW matches 8.6 kW display on meter.

Calculation for KW from previous page is based on 100% power factor. Your kW calculation will be higher than actual display. Use a 0.9 multiplier for 90% power factor. Power factor is typically 90-95% although your power factor may be better (higher number) or worse (lower number) dependent on the efficiency and type of load being monitored.

Honeywell E-Mon electronic meters have no moving parts and are shipped calibrated, tested, and fully functional condition.

- All potentiometers are sealed
- No field adjustments are required
- No preventative or scheduled maintenance is required
- No cleaning, decontamination, or calibration procedures are required for the lifetime of the meter

Honeywell E-Mon meters are highly accurate and certified by an independent test lab to ANSI C12.20 national accuracy standards (+/- 0.2% from 1% to 100% of meter rated amperage.)

Variables that cause inaccurate readings or submeters to read more or less than the utility meter:

- Installation errors; for example 100 amp sensors connected to a 200 amp meter
- Installation errors; for example the meter displays a Check Install error message.
- Sub-meter has more than one set of current sensors installed in parallel and a multiplier should be used.
- Sub-meter has only one set of current sensors installed and a multiplier should not be used.
- Not every load is submetered.
- Think everything is submetered but it's not.
- The single line drawings are wrong, so again, not everything is metered.
- Not accounting for transformer losses.
- The facility has more than one utility service meter and the wrong utility bill is being compared.
- The utility meter is wrong.
- Even if the sub-meter read the same day as the utility, time of day readings could differ by 23 hours.
- Utility meter was estimated and not an actual reading.
- Sub-meter was read incorrectly.
- Miss-perception (they were expecting some other result, so they think the readings are wrong).

Electrical Terms Glossary

- **Amperage:** the base unit of measurement for electrical current. Equal to voltage divided by load resistance, and expressed in Amps.
- **Current:** the amount of energy flowing through a conductive wire, or being used by a load.
- **Demand:** your instantaneous power usage, or, how much power you are using at any given instant of time. Measured in kW.
- **Demand kW:** The maximum power recorded during a certain period of time is called demand. It is measured in “KW” (Active Power) and /or “KVA” (Apparent Power). Most utilities use 15-minute intervals for billing demand.
- **kW kilowatts**: one thousand watts of power used at any given instant of time.
- **kWh kilowatt-hour**: one thousand watts of power used over the course of one hour. Normally used when reading usage.
- **Phase:** a single feed of electrical power, usually from a transformer.
- **Single Phase:** one or two feeds of electrical power, each running independently of each other.
- **Three Phase:** three feeds of electrical power, each running independently of each other.
- **Power Factor:** a percentage based number that gives you the true power consumed in a system. Tied into your VAR, Utility companies generally charge extra if your power factor goes below 80%.
- **Transformer:** A device that “transforms” voltage and current into useful voltage and current. Where your source generally comes from.
- **Usage:** The amount of power consumed in a given period of time. Measured in kWh.
- **Voltage:** The electric potential or potential difference. Expressed in volts.
- **Volt:** A measurement of voltage.
- **VAR:** Volt-Amp Reaction. Power losses due to inductive reactance in a system. How your power factor is determined.
- **Watt:** The basic measurement of electrical power. Equal to voltage times current.