UNDERSTANDING EQUIPMENT NAMEPLATES

Nameplates provide useful information about equipment. Among other things, the information can be used to understand energy use, find compatible or more efficient replacements for equipment and troubleshoot problems. This fact sheet provides details about types of information found on nameplates.

Basic Nameplate Information

**General Information:**
Most equipment nameplates will have some common items of information. Many of these are self-explanatory, and include:
- Manufacturer
- Manufacturer’s address
- Model number
- Serial number
- Certification mark(s)

This general information can be useful in finding out more details about particular equipment through the manufacturer’s published information. Various certification marks are shown below.

The model number and serial number may provide specific information. The manufacturer’s literature may help decipher the coding used for particular equipment. As an example, a generator serial number might be **P4W00236D05045**, where:
- **P4W** - Product designation
- **00236** – Sequential number assigned on manufacturing date
- **D** – Manufacturing location letter code
- **05** – Year manufactured
- **045** – Day of the year manufactured (045 = Feb 14)

A light fixture model number might be **SH 400MP A16 240 HEB WGA16**, where:
- **SH** - Fixture series
- **400MP** – Lamp type
- **A16** – Reflector style
- **240** – Voltage
- **HEB** – HID electronic ballast
- **WGA16** – Wire guard for A16 reflector

Basic electrical information, common to lighting fixtures, motors, electrical appliances and heating and cooling equipment, includes the following:
- Voltage (V)
- Amperage (A, Amps)
- Frequency (Hz or cycles per second)
- Power in Watts (W) or Horsepower (HP)
Nameplate Data for Different Equipment Types

Motors:
The National Electric Code requires that motor nameplates include the following information in addition to the manufacturer’s name and address:

- **Rated voltage(s)**
- **Rated full-load amperage** at each voltage level (FLA)
- **Frequency** – typically 60 or 50hz
- **Phase** – Single or three phase
- **Speed** - Rated full-load speed (in RPM)
- **Insulation Class and rated ambient temperature** – Insulation class may be B, F and H, and the rated ambient temperature is the maximum allowable ambient temperature during operation.

**Rated Horsepower**

**Time Rating** – Usually continuous duty, but some motors may be rated for as low as 5 minutes of continuous operation.

**Locked-rotor code letter**

Other motor data may include:

- **Frame size**
- **NEMA design letter** – indicates the relationship between speed and torque
- **Full-load efficiency**
- **Power factor**
Pumps:

Items specific to pumps may include:

Rated Flow (Q) - gallons or liters per minute (GPM or lpm)
Head pressure at rated flow - feet of water, pounds per square inch (psi), pascals (pa)
Power – Horsepower (HP)
Rated rotational speed – revolutions per minute (RPM)
Maximum pressure – feet of water, psi
Maximum fluid temperature – degrees Fahrenheit or Celsius (°F or °C)

Other information that may appear on the nameplate, or may be encoded in the Type or Model number, may include:

Type of pump – centrifugal
Materials used in components – Seals, impellers, shafts, etc.
Number of stages
Number of impellers
Fans:
- **Air flow** – CFM
- **Static pressure** – inches of water
- **Fan diameter** – inches, for centrifugal fans

Heating Equipment:
- **Fuel Type** – Natural gas, LPG (propane), #2 oil, etc.
- **Input** – Heat input in Btu/hr
- **Minimum input** – minimum heat input in Btu/hr
- **Thermal Output** – Useful heat, in Btu/hr
- **Efficiency** – In percent (can be estimated by dividing thermal output by the input)
- **Gas Supply Pressure**
### Refrigeration Condenser Nameplate

![Condenser Nameplate](image)

**Lighting Fixtures:**
Lighting ballasts generally have nameplates with a variety of information, including:

- **Operating temperatures**
- **Input voltage(s)** – V
- **Output voltage(s)** – V
- **Input frequency** (usually 50 or 60) – Hz
- **Sound rating**
- **Ballast type and class**

The ballast nameplate may also indicate compatible bulbs and include wiring diagrams, start temperatures and other characteristics.
<table>
<thead>
<tr>
<th>Description</th>
<th>Abbreviation</th>
<th>Common Units and notes</th>
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<tbody>
<tr>
<td>Rated Flow</td>
<td>Q</td>
<td>Gallons per minute (GPM)</td>
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<tr>
<td></td>
<td></td>
<td>Liters per minute (lpm)</td>
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<tr>
<td>Air Flow</td>
<td></td>
<td>Cubic feet per minute (CFM)</td>
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<tr>
<td>Pressure</td>
<td>P</td>
<td>Inches of water (in.)</td>
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<tr>
<td></td>
<td></td>
<td>Feet of water (feet, ft.)</td>
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<tr>
<td></td>
<td></td>
<td>Pounds per square inch (psi)</td>
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<td></td>
<td></td>
<td>Pascals (pa)</td>
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<tr>
<td>Power</td>
<td></td>
<td>Horsepower (HP)</td>
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<td></td>
<td></td>
<td>Watts (W)</td>
</tr>
<tr>
<td>Rated Rotational Speed</td>
<td></td>
<td>Revolutions per minute (RPM)</td>
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<tr>
<td>Head pressure at rated flow</td>
<td>H, TDH</td>
<td>See Pressure</td>
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<tr>
<td>Maximum pressure</td>
<td>Pmax</td>
<td>See Pressure</td>
</tr>
<tr>
<td>Maximum fluid temperature</td>
<td>Tmax</td>
<td>Degrees Fahrenheit (°F)</td>
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<td></td>
<td></td>
<td>Degrees Celsius (°C)</td>
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<tr>
<td>Fuel Type</td>
<td></td>
<td>Natural gas</td>
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<td></td>
<td></td>
<td>Propane (LPG)</td>
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<tr>
<td></td>
<td></td>
<td>#2 Oil</td>
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<tr>
<td>Minimum input</td>
<td></td>
<td>British Thermal Units per hour (Btu/hr, BTUh)</td>
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<tr>
<td>Thermal Output</td>
<td></td>
<td>British Thermal Units per hour (Btu/hr, BTUh)</td>
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<tr>
<td>Efficiency</td>
<td></td>
<td>Percent (%)</td>
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<tr>
<td>Gas Supply Pressure</td>
<td></td>
<td>inches of water (in., in-wc)</td>
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<tr>
<td></td>
<td></td>
<td>Pounds per square inch (psi)</td>
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<td></td>
<td></td>
<td>Pascals (pa)</td>
</tr>
<tr>
<td>Rated voltage(s)</td>
<td>V</td>
<td>Volts (V)</td>
</tr>
<tr>
<td>Rated full-load amperage</td>
<td>A</td>
<td>Amperes (A) – listed for each voltage</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
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<tr>
<td>Phase</td>
<td>Φ</td>
<td>Single or three</td>
</tr>
<tr>
<td>Speed</td>
<td></td>
<td>Revolutions per minute (RPM, R.P.M.)</td>
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<tr>
<td>Full Load Efficiency</td>
<td></td>
<td>Percent (%)</td>
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<tr>
<td>Power Factor</td>
<td>PF</td>
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Abbreviations and Certification Marks

**Common Abbreviations**

A – Amperes or amperage (electrical current)
AC (A.C.) – Alternating current
AFUE – Annual Fuel Utilization Efficiency
Amp. – Amperes (electrical current)
BTU – British thermal units (heat energy)
BTU/hr – BTUs per hour (rate of heat delivery)
CFM – Cubic feet per minute
EER – Energy Efficiency Ratio
FLA – Full load amperes (electrical current)
°F – Degrees Fahrenheit
°C – Degrees Celsius
DC (D.C.) – Direct current
Feet – On pumps, feet of water (pressure)
Gal. – Gallons (liquid volume)
GPM – Gallons per minute (flow)
HP (H.P.) – Horsepower (motor power)
HSPF – Heating Season Performance Factor
Hz – Hertz (alternating current frequency in cycles per minute, typically 60 or 50)
In. W.C. (also “W.C.”) – Inches of water column (pressure)
LRA – Locked rotor amperes (electrical current)
PSI – Pounds per square inch (pressure)
PSIG (P.S.I.G.) – Gauge pressure in pounds per square inch
PH or Φ – Phase (typically single or three)
QTY - Quantity
RLA – Running load amperes (electrical current)
RPM (R.P.M.) – Revolutions per minute (rotational speed)
SEER – Seasonal Energy Efficiency Ratio
S.F. – Service Factor
W – Watts (power)
## Common Certification Marks

<table>
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<tr>
<th>Certification Mark</th>
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<tr>
<td>Canadian Standards Association (CSA)</td>
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<td>Conformité Européene (European Conformity)</td>
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<td>CSA Gas Appliance Certification</td>
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<td>Federal Communications Commission (FCC)</td>
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<td>Underwriters Laboratory (UL)</td>
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<tr>
<td>Underwriters Laboratory Recognized Component Mark</td>
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