

This is your own personal Cheat Sheet for calculating Demand (KW)

Key

KW = Kilowatt (Demand)

Kwh = Kilowatt Hours (Energy)

I = Current

I¹ = Phase 1 Current

I² = Phase 2 Current

I³ = Phase 3 Current

V = Voltage

W = Wattage

pn = Phase to Neutral

pp = Phase to Phase

Basic KW Calculation:

The most basic calculation for Demand is:

$$\text{Kwh} \div \text{Hours} = \text{KW}$$

Calculating Demand from Pulses:

If you are trying to calculate Instantaneous Demand and have a pulse meter, try this equation:

$$\frac{\text{Kwh /pulse} \times 3,600 \text{ sec/hour}}{\text{\# of seconds between pulses}} = \text{KW}$$

Single Phase Calculation:

Most Single-Phase applications will be for Residential and Small Commercial buildings

$$I \times V = W$$

$$W \div 1,000 = \text{KW}$$

Balanced 3-Phase Power Measurement:

Use if all 3 Phases pull the same amount of current

$$I \times V_{pp} \times 1.73 = W$$

$$W \div 1,000 = \text{KW}$$

Individual 3-Phase Current Measurement- Phase to Neutral:

Use if the Phases pull different amounts of current- Most simple calculation for these conditions

$$(I^1 + I^2 + I^3) \times V_{pn} = W$$

$$W \div 1,000 = \text{KW}$$

Individual 3-Phase Current Measurement- Phase to Phase:

Another method of calculating Demand if the Phases pull different amounts of current

$$(I^1 + I^2 + I^3) \times V_{pp} \times .577 = W$$

$$W \div 1,000 = \text{KW}$$

**Want to know more about Demand? Contact the
Demand Experts at Brayden Automation Corp.**

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