

Full-load Currents

Single Phase					Three Phase			
KVA	120	240	277	480	KVA	208	240	480
5	41.7	20.8	18.1	10.4	15	41.6	36.1	18.0
10	83.3	41.7	36.1	20.8	30	83.3	72.2	36.1
15	125	62.5	54.2	31.3	45	125	108	54.1
25	208	104	90.3	52.1	75	208	180	90.2
37.5	313	156	135	78.1	112.5	312	271	135
50	417	208	181	104	150	416	361	180
75	625	313	271	156	225	625	541	271
100	833	417	361	208	300	833	722	361
167	1392	696	603	348	500	1388	1203	601
250	2083	1042	903	521	750	2082	1804	902
333	2775	1388	1202	694	1000	2776	2406	1203
500	4167	2083	1805	1042	1500	4164	3609	1804
Full Load Current = $\frac{\text{KVA} \times 1000}{\text{Circuit Voltage}}$					2000	5552	4811	2406
					2500	6940	6014	3007
					3000	8327	7217	3609

$$\text{Full Load Current} = \frac{\text{KVA} \times 1000}{1.732 \times \text{Circuit Voltage}}$$

Ohms Law $V=IR$ $I=\frac{V}{R}$ $R=\frac{V}{I}$

$$\text{Power (P)} = VI = I^2 R = \frac{V^2}{R}$$

$$\text{KVA} = \sqrt{[(\text{KW})^2 + (\text{KVAR})^2]}$$

$$\text{KW} = \text{pf} \times \text{KVA} \quad \text{pf} = \text{power factor}$$

Rough 50 Hz Rated Motor Conversions
 6/5 of HP rating for 60 Hz operation
 6/5 of voltage rating for 60 Hz operation
 50 Hz Std. Voltage is 220/380 which is similar to 277/480 at 60 Hz

1 HP = 746 watts

Formula for Timing an Electric Meter That Has a Disc

$$\text{Watts} = \frac{(3600)(\# \text{ of revolutions})(\text{Kh})(\text{multiplier})}{(\text{Seconds})} \quad \text{RPM} = \frac{120 \times \text{frequency}}{\# \text{ of poles}}$$

Kh comes off of the meter nameplate.

Multiplier is 1 on smaller installations. Large installations should have a well-marked multiplier.

Revised: 03/10