

## ELECTRICAL UNITS-THEIR EQUIVALENTS & FORMULAE

1. H.P = 746 watts = 0.746 k.w = 33,000 ft. lbs. per minute = 1.104 Metric H.P

1. B.O.T Unit = 1,000 Watt Hours or 1 Kilowatt Hour

Torque (Ft. lbs.) = (H.P X 33,000), (RPM X 2)

Current = watt, volts

Motor Output in H.P = (Kilowatt input x Efficiency), 0.746

K.V.A = (Volts x Amps) 1000

Power Factor = Ratio of true power/ Apparent power = Kilowatt, K.V.A

True power in 3 Phase = (1.73 x Volts x Amps x P.F x 2), 1000

Circuit in kilowatt

Single phase Motor Amperes = (H.P x 746), (Efficiency x Volts x P.F.)

Two phase motor Amperes = (H.P x 746), (Efficiency x Volts x P.F. x 2)

Three phase motor Amperes = (H.P x 746), (Efficiency x Volts x P.F. x 1.73)

1 Electric Unit = 1 Kilowatt hour

1 Kilowatt (K.W) = 738 ft. lb. per sec

1 Kilowatt (K.W) = 102 M Kg per sec

1 Kilowatt (K.W) = 1.341 horse power.

1 Kilowatt (K.W) = 1.360 Metric horse power.

1 Kilowatt hour (K.W.H) = 3413 B. Th. U.

1 Kilowatt hour (K.W.H) = 860 Calories

1 Foot Pound (Ft. lb.) = 0.1383 Mkg.

1 B. Th.U = 778.3 ft.lb

1 B. Th.U = 107.6 Mkg

1 B. Th.U = 0.2520 calories

1 calories (Cal) = 3.088 foot pound

1 calories (Cal) = 3.968 B. Th. U