3 phase power calculation example

3 phase power calculation example

To calculate the total power in a 3 phase system, you will need to know the voltage and current of each of the three phases. The formula for calculating total power in a 3-phase system is: Total Power = ?3 x Voltage...

The formula used to calculate the three-phase power is as follows: Three Phase Power (P) = Voltage (V) * Current (I) * Power Factor (PF) * ?3 In this formula, the voltage is measured in volts (V), representing the...

To calculate the total power of a three-phase system, the formula used is as follows: Total Power (W) = ?3 × Voltage (V) × Current (A) × Power Factor This formula considers that the three-phase system has three...

The main formula for calculating the total power in a three-phase system, given the voltage (V) and current (I), is as follows: P = ?3 × V × I × cosf P: This denotes the total power in the system, measured in watts...

It’s quite easy to convert kW to amps and amps to kW in a simple 1-phase AC circuit (compared to a 3-phase power calculation). That requires only the basic Ohm’s law; you can simply use our kW to amps calculator here for conversion.

In a 3-phase AC circuit (usually a 3-phase motor), converting amps to kW and kW to amps is not all that easy. To simplify the whole thing, we have created 2 three-phase power calculators:

Basically, we just multiply amp by volts. The ‘1,000’ factor is there to convert from W to kW; we want the resulting power to be in kilowatts. 1 kW = 1,000W.

Note: Later on, we will also see how we can use the 3-phase current formula to design a 3-phase motor amps calculator. That one converts kW to amps in 3-phase circuits, very important in electric motor design.

You can freely use this calculator to convert amps to kW in a 3-phase circuit. You need to input the amps, voltage, and the power factor (it’s between 0 and 1, specific for each circuit):

As you can see, the more amps and volts you have, the more powerful 3-phase electric motor you have. Quite similarly, a higher power factor is proportional to higher power output.

You can use this example to see how the 3-phase power calculator works: A 100 amps motor on a 240V 3-phase circuit with a 0.9 power factor produces 37.41 kW of electrical power. Insert these 3 quantities in the calculator, and you should get the same result.

Using this power formula, we can, for example, do a 3-phase motor kW to amps calculation. Do note that if a 3-phase motor with lower voltage and lower power factor will draw more amps to produce the same power output.

Contact us for free full report

Web: https://www.hollanddutchtours.nl/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346