What is single phase and 3 phase electricity?

Choosing a generator shouldn't be tough. Whether it's a single or 3 phase generator, you want a power unit that is going to meet your energy requirements. Otherwise, your home or business won't have a safety net during an outage.

Of course, picking a unit isn't as straightforward as opting for one that looks the part. To make sure your needs are met, you must invest in a generator that has the right tools for the job. Enter the varying phases of electricity.

Understanding the differences between them and what they offer is essential. With that in mind, here are the quirks of single phase and 3 phase power supplies.

What is alternating current?

Before we move onto single and 3 phase generators, it's vital to know about alternating current. AC is a form of electrical current in which the flow of power continuously changes directions. For the past hundred years or more, AC is what is delivered to homes and businesses around the country.

What phase does each premise use?

It depends on the building. However, as a rule, homes tend to use a single phase current, whereas businesses go with a 3 phase electricity supply. So, if you're looking for a generator and don't know which one to pick, you can use the type of abode as a starting point.

Why do phases differ for individual premises?

Usually, electricity phases differ because of energy requirements. As houses are small and don't accommodate many people or appliances, they only need a single phase power circuit. Companies with corporate offices house lots more people and devices on a daily basis. As a result, they need a supply that is constant and powerful enough to maintain everything from computers, laptops, and servers.

A 3 phase generator, then, will pick up the slack should your regular energy supply dip for unknown and unforeseeable reasons.

Why is 3 phase more powerful?

Although it's tempting to assume that a 3 phase generator delivers a higher voltage, it's not necessarily true. A single phase generator will complete a 360º cycle and peak at 90º and 270º twice. Unfortunately, this makes a single phase an unwise option for businesses as they require power that doesn't have as many dips and flows.

A 3 phase generator, on the other hand, uses 'Delta' and 'Wye' circuits to provide an equal load. It does this by introducing all three power phases into the cycle by 120º, making a 3 phase unit a lot more effective at carrying a bigger load if required.

When should you use a single and 3 phase generator?

The best tip is to analyse the wattage. Single phase generators are brilliant when systems and applications are under 1,000 Watts as the load isn't as high. The opposite is true of 3 phase units.

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