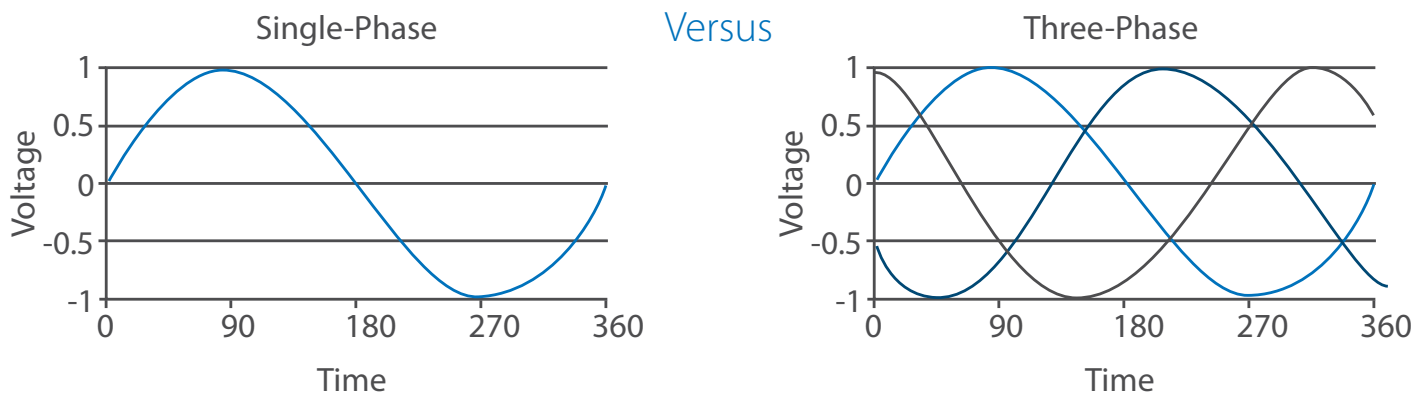


3-phase power vs. 1-phase power

Advantages of three-phase power supplies over traditional single-phase



When designing electrical panels for improved efficiency, space utilization and reliability, engineers face a key challenge when it comes to selecting the right power supply. It is important to understand how a given power supply affects the panel's overall size and longevity.

The efficiency of a particular power supply is a major concern. Opting for a three-phase power supply rather than the traditional single-phase supply can provide higher efficiencies while also reducing the current draw on the input voltage.

Another issue that designers face when using a single-phase input power supply in a three-phase system is load balancing. To balance a three-phase system using single-phase power, the designer would need to use three separate power supplies and then balance the load on each supply appropriately. This can become very time-consuming, especially if changes to the system are required after the initial design has taken place.

If one or more of the power supplies fail with this

type of design, it would lead to a phase imbalance that could result in system failure. Power demand from each component at any particular time can also cause the phases to get out of balance. Using a single three-phase power supply can eliminate these concerns and make it easier to design the system.

Physical panel space is also becoming more of an issue. By keeping the size requirements of the components in the panel to a minimum, design engineers can dramatically reduce the overall size of the panel. The physical size of three-phase power supplies over the years has decreased relative to the old-fashioned single-phase unit.

Losing a phase while in operation can also lead to problems when using a single-phase power supply. If a critical application were to lose the phase that the power supply is using, the entire system could go down. Some three-phase power supplies can withstand the loss of a phase and still be able to maintain the required output voltage/current.

Switch mode power supplies products lineup

Three-phase/
single phase input

S8VK-WA



Power rating	Rated input voltage	Rated output voltage	Rated output current	Maximum boost current	Maintenance point indicator	Size (W×H×D) (mm)	Model
240 W	Three-phase / single-phase 200 to 240 VAC (Allowable range: Three-phase / single-phase 170 to 264 VAC, 240 to 350 VDC)	24 V	10 A	15 A	Yes	55×124×117	S8VK-WA24024
480 W			20 A	30 A		65×124×117	S8VK-WA48024
960 W			40 A	60 A		118×124×117	S8VK-WA96024

Front-mounting bracket (Order Separately)

- DIN Rails are not necessary when using mounting brackets.
- Side by side mounting is possible with mounting brackets
- Rigid stainless steel construction

For more information, refer to S8VK-WA Data Sheet (Catalog No. T219I-E3-01).

Single-phase input

S8VK-X
Cat. No.
T65I-E-02



S8VK-S
Cat. No.
T64I-E-01



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