

VFD or Phase Converter?

Drives (VFD'S) and Phase Converters can allow operation of motors and other three phase loads from single-phase utility services. What are some of the issues affecting which product to select?

MULTIPLE LOAD CAPABILITY

Phase Converters can operate multiple loads while VFD'S are generally limited to single load operation.

Converters can also control motors not of similar HP ratings. Standard Converters can run up to 5 motors at a time – either separately or simultaneously.

Rotary Converters can run unlimited quantities of motors, operating at the same time, if sized properly.

EASE OF OPERATION AND MAINTANENCE

VFD'S present a greater challenge in both the operation and maintenance over a converter. (Converters are simple creatures)

HARMONICS

This is a big concern these days and Phase Converters – being primarily electromechanical devices are generating NO harmonics since they use linear components. Harmonics on single-phase lines can be an issue when using VFD's to create three phase.

SERVICABILITY

End users will always be within a short distance of one of the many motor repair shops and/or electrical distributors capable of either repairing or supplying parts to fix a converter. How many shops are able and willing to service electronic devices such as VFD's? Most drives must be removed and sent to an authorized repair stations to determine if unit is repairable or needs to be replaced.

LESS ADDED COST

Converters do not need line and/or load reactors as many drives do.

SIMPLICITY

Converters are simple to use – install and maintain in remote and rural locations. Basic electrical tools and knowledge are needed to make a unit work.

SURGES

Converters are not normally affected by surges which are present on the Utility lines. VFD'S are not as forgiving during lightning storms – power surges – under-voltage and over-voltage conditions which appear on Utility lines.

ENVIRONMENT

Converters are normally Nema 3R rated, out of the box, and also not as susceptible to temperature and weather extremes.

GOOD SOLUTION

Many times and Converter and VFD can be paired together to offer the customer a great solution if speed change is needed and a very rugged power conversion front end is needed.

SPECIAL LOADS

If you have to power a DC drive from three phase power – you cannot use a VFD to generate the three phase. Converters can be used to power UPS systems that require three- phase and a drive cannot be used in this application Resistive loads – such as heating - can be run off a converter and a VFD cannot be used for this type load.

OVERVIEW

1. If you do not need to change the speed of a motor – a converter is a great choice.
2. If you have motors over 10 HP – a converter is a great choice.
3. If you need a unit that is easy to service – install and maintain than a converter is a great choice.
4. If you need to run multiple motors – typically in a lift station environment – a converter is great choice.
5. Special loads are a great place to consider using Phase Converters
6. LONGEVITY – Like the old Timex ad – Converters "Take a licking and keep on ticking"