

## Input Power Problems

Stable, balanced input power is essential for long term reliable operation of motor drives. Sometimes subtle characteristics in power systems can cause motor drives to become problematic. Certain power source problems can result in immediate drive failure yet other power system characteristics can cause occasional failures or nuisance tripping. Because there are so many variations in power systems, it is often difficult to pinpoint the actual problem or cause of drive anomalies or failures without a thorough investigation.

In order to gain an insight into the possible causes of recurring or occasional drive failures, we've created a questionnaire of common questions we find ourselves asking customers when we suspect input power problems. In order to expedite the information gathering process, we ask that anyone experiencing what would appear like abnormal or recurring drive failures, fill out the following questionnaire and fax it into Control Techniques Technical Support for review.

Company Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Your Name \_\_\_\_\_ Dept \_\_\_\_\_

Main Switchboard Tel # \_\_\_\_\_

Your Telephone # or Ext \_\_\_\_\_

Your email address \_\_\_\_\_

Fax back to Control Techniques Tech Support 716-774-8949

## **General Questions**

How many drives are in the affected system ?

What are the names/models of drives ?

How old is the system ?

How long has the problem persisted ?

How many drives are affected ?

Are some drives affected and some not ?      Always the same drives ?

If you can provide a Power Distribution System Overview Drawing/Sketch,  
that would be ideal !

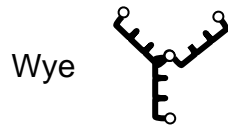
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Include any other background information that you feel would be pertinent or  
useful.

Consult [CTAN132](#) ← Click blue link

## Questionnaire for Drives with Power Problems

- 1) Is it just this particular location that the drive is failing or are there other drives on the same power line segment that are affected?..... Yes / No
- 2) What is the Ampacity of the power feed to the drive(s) (ie 600amp bus)?.....Amps
- 3) Is the main power feed originating from a transformer? .....Yes / No \_\_\_\_\_ KVA
- 4) Is the transformer secondary a delta or wye connection?..... Wye / Delta



- 5) Are any secondary connections earth grounded? ..... Yes / No
- 6) What is the Nominal line voltages Line-Line and Line to Earth ( Unloaded vac / Loaded vac )  

<u>Unloaded vac / Loaded vac</u>	<u>Unloaded vac / Loaded vac</u>	<u>Unloaded vac / Loaded vac</u>
L1 – L2 _____ / _____	L2 – L3 _____ / _____	L3 – L1 _____ / _____
L1–Earth _____ / _____	L2 – Earth _____ / _____	L3 – Earth _____ / _____
- 7) Is there a Line reactor in front of this drive ?.....Yes / No

If so what is the rating or part number ?.....

- 8) Is there a Line filter being used on the input of this drive ?..... Yes / No
- 9) Is there an AC Input Line contactor feeding the drive(s)? ..... Yes / No
- 10) Are there other drives on the same power line segment ? ..... Yes / No  

Are they being affected too ?..... Yes / No

- 11) What is the largest drive on this segment of power line ?.....HP
- 12) Are there any machines/equipment on the line that turn off/on that may effect the drive? ie large AC motors, welders, air compressors etc Yes / No \_\_\_\_\_
- 13) Are Power Factor correcting Capacitors used in the power distribution system?..... Yes / No
- 14) Does this problem seem to occur at a particular time of day ?..... Yes / No AM/PM
- 15) Does the problem occur on a power up situation? ..... Yes / No
- 16) Has this problem always existed or has it recently started occurring?..... Always / Recent
- 17) Has there been any recent work on the power distribution system for your plant? ... Yes / No
- 18) Has there been any new drives or power equipment recently installed?..... Yes / No
- 19) The input power supplied from a:

- ☐ Standard 60Hz Power Grid  
☐ Private Generator System

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