



Variable Frequency Drives 16 Hours

Who Should Attend?

Intended for technicians, supervisors and others who have responsibility for maintaining and troubleshooting VFD's. This course is only done as a site specific training program.

Course Description:

This course covers the need-to-know information necessary to troubleshoot most common VFD problems. Students will cover the components and their functions, how the VFD operates as a system and how to perform field operation and troubleshooting using test equipment.

Outline:

1. VFD Overview
 - a. What is a VFD
 - b. Advantages and Disadvantages of a VFD
2. Terms and Definitions
3. Useful Formulas
 - a. Power Triangle
 - b. HP to kVA conversions
 - c. Breaker Sizing
4. Motor Basics
 - a. Basic Motor Theory
 - b. Introduction Principles
 - c. Single and 3-Phase
5. Electronic Component Review
 - a. Passive Component Review
 - b. Semiconductor Use
 - c. Analog and Digital Devices
6. VFD Power Electronics
 - a. AC to DC Conversion
 - b. DC to AC Inversion
 - c. Harmonic Effects
7. Types of VFD's
 - a. Current Source inverter (CSI)
 - b. Variable Voltage Inverter (VVI)
 - c. Pulse-Width Modulation (PWM)
8. VFD Programming
9. Maintenance and Troubleshooting
 - a. Preventive Maintenance
 - b. Troubleshooting Philosophy
 - c. Using Test Equipment

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