



Training Seminars & Conferences



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An Intensive 5-Day Training Seminar On

# Variable Frequency Drives (VFDs)

02 - 06 Feb 2020, Dubai  
16 - 20 Aug 2020, Dubai



 View Details

[www.euromatech.com](http://www.euromatech.com)

An ISO 9001:2015  
and ISO 29990:2010  
Certified Company

# Variable Frequency Drives (VFDs)

## INTRODUCTION

This EuroMaTech training course highlights the relevance of Variable Frequency Drives (VFDs), also known as adjustable speed drives in the electrical installation. A VFD allows motor-based systems to adjust the speed at which the motor runs. That speed is based on how much power the mechanical systems need to meet the demand of the building. The demand of the system is also referred to as the "load" of the system. By varying the speed, the motor is able to meet the needs of the load without using more energy than necessary.

Nearly all Variable Frequency Drives work on the basis of taking the existing AC supply, converting it to DC using a rectifier, and then converting it back to a variable frequency supply using an inverter. Modern VFDs utilize the new matrix design with innovative trends to optimize the performance of the VFD.

Currently, VFDs are being built into many new systems; however, they can also be added to some current systems through a retrofit. When looking to retrofit a system with a drive, consult a professional to match the drive with the existing system and motor. Making sure they are properly matched is very important in making sure you gain the highest efficiency possible.

## WHO SHOULD ATTEND?

The technicians and maintenance staff will be able to perform correct maintenance procedures and troubleshooting of AC motors and VFDs. This Variable Frequency Drive training course is suitable to a wide range of professionals but will greatly benefit:

- Electrical Engineers
- Maintenance Technicians
- Maintenance Management Professionals
- Project Engineers

## PROGRAMME OBJECTIVES

- Understand the factors controlling speed of an induction motor
- Explain the construction and operation principles of VFD
- Determine the benefits of the VFD
- Understand the VFD technologies
- Explain the importance VFD maintenance

## TRAINING METHODOLOGY

The goals of each participant are discussed to ensure their needs are fulfilled, as far as possible. Questions are encouraged throughout, particularly at the daily wrap up sessions. This provides opportunities for participants to discuss specific issues and, if possible, find appropriate solutions. Case studies are employed to highlight particular points and appropriate video materials used to illustrate particular conditions.

## PROGRAMME SUMMARY

This EuroMaTech training course covers a comprehensive range of topics related to variable frequency drives. These drives are increasingly popular and installed in most oil and gas industries pumps and HVAC systems. Attending this VFD training course will ensure total understanding with regards to the characteristics, construction and operations of the variable frequency drives.

## QUALITY CERTIFICATIONS & ACCREDITATIONS

EuroMaTech is proud to be associated with the following accreditation bodies:



The PMI® Registered Education Provider logo is a registered mark of the Project Management Institute, Inc.

# PROGRAM OUTLINE

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## DAY 01

### Fundamentals of Three Phase AC Motors, Starters and Factors Controlling Speed

- Three-phase AC motors, types, construction, characteristics and applications
- Starting of induction motors and associated techniques and acceleration
- Speed control requirements of AC motors and load matching
- Soft starters characteristics
- Selection of AC motors for industrial applications and service factor
- Fundamentals of a variable speed drive

## DAY 02

### Components and Characteristics of Variable Frequency Drives

- Power semiconductors, diode, thyristor (SCR), IGBT, MOSFET, GTO and others.
- Voltage-source inverters characteristics
- Current source inverters characteristics
- Benefits and applications of VFD
- Two-level PWM, regeneration and dynamic braking
- Medium voltage VFD

## DAY 03

### Characteristics and Functionalities of Pulse Width Modulation

- The rectification process
- The DC bus process and functionalities
- The inverter types, process and functionalities
- Volts per hertz operation
- The Megadrive -Load commutated inverters
- PWM technology in Megadrive-LCI

## DAY 04

### Troubleshooting, Test Instruments and Maintenance of Drives

- Soft starters and selecting the correct VFD
- Troubleshooting techniques and maintenance for VFD
- Testing instruments and scopemeters for VFD
- Shaft ground rings
- VFD parameter settings and settings
- VSD bearing failures and remedies

## DAY 05

### Modern VFD Matrix and Trends

- VFD matrix design
- VFD management
- Preventive VFD faults and failures
- Innovative trends in VFDs
- Case studies, selection and design
- Q&A and wrap up session

## IN-HOUSE TRAINING

EuroMaTech is capable of conducting this training programme exclusively for your delegates. Please e-mail us on [inhouse@euromatech.ae](mailto:inhouse@euromatech.ae) for further information and/or to receive a comprehensive proposal.

# Variable Frequency Drives (VFDs)

✓	Date	Venue	Fee(\$)
	02 - 06 Feb 2020	Dubai	US\$4,950
	16 - 20 Aug 2020	Dubai	US\$4,950

*This fee is inclusive of instruction materials, documentation, lunch, coffee/tea breaks & snack. All Fees are subject to 5% Value Added Tax (VAT).\**

## Your Details

Name (Mr/Ms):.....  
Position:..... Organisation:.....  
Address:.....  
.....  
City / Country: .....  
Telephone / Fax: .....

## Mode Of Payment

- Please find enclosed a cheque made payable to EuroMaTech  
 Please invoice me  
 Please invoice my company as follows:

Contact Name: .....  
Company Name: .....  
Address:.....

### Documentation

High Quality material has been prepared by the Seminar Leader for distribution to delegates. In addition, a special note pad to facilitate note taking will be provided.

### Certificates

A Certificate of Completion will be issued to those who attend & successfully complete the programme.

### Schedule

Our Course timings commences at 08:30 and concludes at 14:00, followed by lunch on a daily basis.

### Hotel Accommodation

EuroMaTech has negotiated special rates for a limited number of rooms in the hotel. Early registration will help to secure a room at the reduced rate.

### Registration & Payment

Please complete the registration form on this page & return it to us indicating your preferred mode of payment. For Further Information, Contact Your Nearest EuroMaTech Office.

### Cancellation Policy

Request for seminar cancellation must be made in writing & received at EuroMaTech three weeks prior to the seminar date. A U.S.\$250/- processing fee will be charged per delegate for each cancellation. Thereafter, we regret that we are unable to refund any fees due, although in such cases we would be happy to welcome a colleague who would substitute for you.

### Disclaimer

EuroMaTech reserves the right to alter the content, location of the Seminar, or the identity of the speakers in case of events beyond our control.

**\*VAT Announcement:** The Government of UAE have introduced Value Added Tax (VAT) on goods and services from 01-January-2018. In compliance with the legislation issued by the UAE Government, we will be applying a 5% VAT on the fees for all our programs and services offered from January 2018 as applicable and stipulated in the FTA circulars.

## Contact Us:

### U.K. Office:

109 Mount Pleasant  
Liverpool L3 5TF, United Kingdom  
Telephone: +44 151 709 7100  
Fax: +44 151 709 7181

### Middle East Office:

P.O. Box 74693  
Dubai, United Arab Emirates  
Telephone: +971 4 4571 800  
Fax: +971 4 4571 801

### Email Address:

info@euromatech.ae

### Website:

www.euromatech.com



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