

Fundamentals of Variable Speed Drives and Soft Starters

Course Code: VVD1

Duration: 2 Days

Cost: \$800 excl GST

Course Purpose:

Covers the construction and operating characteristics of 3-phase induction motors, variable speed drives and soft starters. Principles of variable voltage, variable frequency, (VVVF) speed control and closed loop flux vector speed / torque control of a 3-phase induction motor.

Presentations and practical "hands on" exercises on the Telemecanique Altivar 31 and Altivar 71 / 61 variable speed drives using the supplied workbooks and training units. Basic set-up and commissioning using PowerSuite software and installation and fault-finding procedures for the Altivar variable speed drives.

Demonstration on potential energy savings with variable speed drives on fan / pump applications using the Eco 8 software.

Detailed presentation on the Altistart 48 soft starter and the principles of SCR phase control. Concept of electronic soft starters using; voltage ramp, current limitation and torque control.

This course is suited for electricians, technicians and maintenance staff.

Course Objectives:

Upon completion of this course, you will be able to perform these actions:

- Identify the different types of motor loads
- Assess applications for variable speed drives and soft starters
- Describe the general workings of a variable speed drive and soft starter
- Correct installation methods to reduce radio interference, (RFI)
- Commission, install and fault find on variable speed drives and soft starters

Target Audience:

Individuals who have a general understanding of a variable speed drive and/or soft starter. Electrical background is preferable although mechanical plant engineers wanting a better understanding will benefit.

Prerequisite Knowledge:

There are no prerequisites for this course.

Course Content:

- Construction and operating characteristics of AC induction motor
- AC drive power circuits
- Basic fundamentals of closed & open loop flux vector control & V/Hz
- Speed and torque control
- PowerSuite commissioning software
- Advance variable speed drive & soft starter applications
- Serial communication options
- Potential energy savings with variable speed drives
- Principles of reduced voltage starters and SCR phase control
- Concept of electronic soft starting; voltage ramp, current limit and torque control

Requirements:

Each attendee must have access to a laptop computer, which they can bring along to the training course.

Duration and Delivery:

- a. Two Day Training Course
- b. In – class sessions at Schneider Electric training rooms, and hotel conference facilities at main centres though out New Zealand.

