

# CONTROL TECHNIQUES<sup>TM</sup>



## 2020 Training Catalog

Issue 1.0

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# General Purpose Drives Training

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Level	Basic
Duration	1.5 Days
Prerequisites	<ul style="list-style-type: none"><li>• Familiarity with AC Drives</li><li>• Basic knowledge of common Industrial Controls</li><li>• Basic Computer Skills</li></ul>



## Course Objectives

This course is designed to introduce the attendee to our line of General Purpose AC drives including the Commander C Series drives and also our high performance general purpose drive – the Unidrive M400. This course is suitable for people who need to gain an understanding of how to commission and maintain these drives.

## Course Content

- Commander C2/300 product line overview
- Unidrive M400 product line overview
- Mechanical Installation: best practices
- Electrical installation: best practices
- Drive commissioning using the Commander C keypad
- Drive Commissioning using the Unidrive M400 keypad
- Drive Commissioning using Connect software
- Common drive trips and how to resolve them

The course is equally split between lecture and ‘hands on’ practical work allowing attendees to simulate plant behavior in a safe environment. Attendees will learn how to perform basic AC drive commissioning including how to perform an Autotune.

Please note that attendees are expected to supply their own computers for use during the course. The attendee must also be able to install software onto their computers.

## Required Software

Please visit the *Downloads/Software* section of our website to download:

- Connect software
- CTUSB cable driver
- CTScope software

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# Unidrive M700/ Intro to MCS Software

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Level	Intermediate
Duration	2.5 Days
Prerequisites	<ul style="list-style-type: none"><li>• Familiarity with AC Drives</li><li>• Basic knowledge of common Industrial Controls</li><li>• Basic Computer Skills</li><li>• Knowledge of common Servo system terms</li></ul>



## Course Objectives

This course is designed to introduce the attendee to our Unidrive M700 high performance AC drive. The course material is designed to provide the attendee with a working understanding of the drive, its operation and features including an introduction to the use of our PLC programming software- Machine Control Studio. This is an intermediate level course and is suitable for people who will be designing new applications.

## Course Content

- Overview of the Unidrive M700 drive family
- Unidrive M Menus and Parameters
- Using Connect software
- Introduction to Machine Control Studio software
- Advanced Motion Controller (AMC) usage
- Introduction to our RTMOE drive to drive networking protocol

The course is equally split between instructor lecture and 'hands on' practical work allowing attendees to simulate plant behavior in a safe environment.

Please note that attendees are expected to supply their own computers for use during the course. The attendee must also be able to install software onto their computers.

## Required Software

Please visit the *Downloads/Software* section of our website to download:

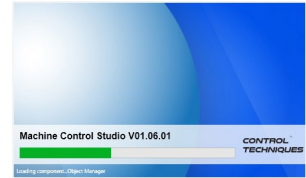
- Connect software
- Machine Control Studio software
- CTScope software

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# Machine Control Studio Advanced

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Level	Advanced
Duration	4 Days
Prerequisites	<u>Completion of the Unidrive M700/ Intro to MCS course</u>



## Course Objectives

This is the advanced programming course for our Machine Control Studio (powered by CoDeSys) drive control software. The course material is designed to provide the attendee with a better understanding of the features and use of this software as it is applied to the MCI-200 family of Machine Control Modules.

## Course Content

- Review of the MCI-2xx family of Machine Control Modules
- Configuring MCS software projects
- POU usage
- Review of supported PLC programming languages
- Creating Functions and Function Blocks
- Creating and using Libraries
- Using the AMC Basic Motion Templates
- Using the graphical RTMOE Cyclic Link Editor
- Using MCS software to perform Motion Control

The course is equally split between instructor lecture and 'hands on' practical work allowing attendees to simulate plant behavior in a safe environment.

Please note that attendees are expected to supply their own computers for use during the course. The attendee must also be able to install software onto their computers.

## Required Software

Please visit the *Downloads/Software* section of our website to download:

- Connect software
- Machine Control Studio
- AMC Basic Motion Templates

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# Digitax HD

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Level	Intermediate
Duration	2.5 Days
Prerequisites	<ul style="list-style-type: none"><li>• Familiarity with PLC technology</li><li>• Intermediate Computer skills including the use of Structured Text programming</li><li>• Familiarity with Industrial Fieldbus technology.</li><li>• Familiarity with common Motion Control applications.</li></ul>



## Course Objectives

This course will cover the installation and commissioning of our Digitax HD servo drive. The course will begin with basic information concerning the drive and end with a fully functional motion axis. Application and use of EtherCat, PLC Open and CTA Basic Motion templates will be demonstrated.

## Course Content

- Overview of the Digitax HD family of Servo Drives
- Drive installation best practices
- Commissioning with Connect software
- Machine Control Studio and PLC Open for Motion
- Machine Control Studio and CTA Basic Motion templates
- Si-EtherCat module usage

The course is equally split between instructor lecture and ‘hands on’ practical work allowing attendees to simulate plant behavior in a safe environment.

Please note that attendees are expected to supply their own computers for use during the course. The attendee must also be able to install software onto their computers.

## Required Software

Please visit the *Downloads/Software* section of our website to download:

- [Connect software](#)
- [Machine Control Studio software](#)

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# Quantum/Mentor MP DC Drives

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Order Code	EDU-DCMMP-ILT2000
Level	Basic
Duration	2 Days
Prerequisites	<ul style="list-style-type: none"><li>• Familiarity with DC Drives</li><li>• Basic knowledge of common Industrial Controls</li><li>• Basic Computer Skills</li></ul>



## Course Objectives

This course features our Mentor and Quantum MP Digital DC Drive family with concentration on the basics of operating, start-up, troubleshooting, and diagnostics. The attendee will gain an understanding of the drive's menu structure as well as becoming familiar with the CTSOft drive configuration tool. The course is suitable for people who will be designing new applications as well as maintaining existing installations.

**NOTE:** This class may only be conducted in our Eden Prairie, MN corporate headquarters. **Class size is limited to 6 people.**

## Course Content

- Overview of the Mentor MP including ratings, part numbers, connections and parameter entry
- Mentor MP commissioning using the keypad
- Mentor MP commissioning using CTSOft software
- Diagnostics and Trip Codes
- FXMP25 Optional Field regulator , features and benefits
- Quantum MP, differences from Mentor MP
- Mentor II transition to MP wizard
- CTSOft and Smartcard back up

The course is equally split between lecture and 'hands on' practical work allowing attendees to simulate plant behavior in a safe environment. Each 2 attendees will share a training simulator.

Please note that attendees are expected to supply their own computers for use during the course. The attendee must be able to install software onto the computer as well.

## Required Software

Please visit the *Downloads/Software* section of our website to download:

- CTSOft software
- CTScope software
- CTUSB Cable driver

# Online Training

## Control Techniques Online Training

In an effort to provide our customers with the information that they need, whenever they need it, and wherever they need it, Control Techniques has provided several different options for online training.

### The Learning Center

The Learning Center is our main source for in depth, immersive product training material.

The courses found on The Learning Center include video and knowledge check questions so you can gauge your understanding of the topic being studied.

To request access to The Learning Center, send an email to [training.cta@mail.nidec.com](mailto:training.cta@mail.nidec.com). Please include your name, company name and email address. Once your request has been reviewed, you will receive an email with login information.

### YouTube®

Control Techniques maintains 2 different YouTube® channels. Both channels provide not only the latest news relative to our drives and controllers, but also “to the point” training videos.

#### To access these channels:

Click [here](#) to access the Control Techniques Americas channel

Click [here](#) to access the Control Techniques Global channel.

Consider subscribing to these channels to automatically be alerted to any new content.

### Drive-Setup.com

Setting up a drive doesn't get any easier than this!

Simply visit [www.drive-setup.com](http://www.drive-setup.com), choose your language, choose your product and be guided through all of the steps necessary to commission a drive.

