



MEDIUM & LOW VOLTAGE DRIVES

~ October 25<sup>th</sup> & 26<sup>th</sup>, 2022 ~

## 2-DAY "HANDS ON" AC DRIVE TROUBLESHOOTING SEMINAR Cortland, NY

### ATTENTION ALL AC VARIABLE FREQUENCY DRIVE USERS:

One of the most **common** inquiries we get here at EMA Inc. is for training on AC Solid-State Motor Drives. Often it isn't cost effective to teach on-site schools for a small # of people. **Here is a VERY cost-effective solution. We're offering a 2-day, intensive seminar on AC Drives (PWM). Who should attend? ANYONE troubleshooting, maintaining, applying or operating AC Drives.** You'll leave this school with a clear & practical understanding of solid-state AC drives, motors and the mechanical/electrical interaction which takes place. You'll learn to recognize classic drive trouble symptoms and quickly resolve common problems. This seminar could **easily** return your investment with just **one** instance of reduced downtime due to your increased knowledge. An electronic background will be helpful, but not essential. We'll review the basic electrical laws and component operation you need to know.

#### ~ DAY ONE ~

##### Safety

##### Drive Application Basics

- \*Horsepower/Torque
- \*Load Types
- \*Typical Applications, Pitfalls and Troubleshooting
- \*Harmonics and Noise

##### Test Equipment and Measuring Methods

- \*Component Testing
- \*Voltage/Current Measuring Methods, Problems and Considerations of Non-sinusoidal Waveforms
- \*Oscilloscope Basics and Safety Considerations

##### Discrete Components and Typical Circuits Overview

- \*Passive Components (capacitors, diodes)
- \*Active Components (transistors, IGBT's etc.) and Associated Circuits
- \*Inductors, Transformers
- \*Electrical Laws

#### ~DAY TWO~

##### AC Motors

- \*Construction & Theory of Operation (Induction)
- \*Connections & Testing
- \*Maintenance

##### AC Drives

- \*Construction & Theory of Operation (PWM)
- \*Braking Types (Dynamic, DC Injection, Line Regenerative)
- \*Programming
- \*User Interface (I/O)
- \*Drive, Motor, and Load Data
- \*Faults & Troubleshooting
- \*Visual & Test Equipment Diagnosis
- \*Typical Application Problems
- \*Maintenance

##### Final Review and Open Question Session.

### WHAT PEOPLE ARE SAYING ABOUT THEIR SEMINAR EXPERIENCE...

"Outstanding class / seminar!!! I will highly recommend this class to all."  
- Bristol-Myers Squibb Company

"Theory was ABSOLUTELY great. Opened my eyes on many subjects. Good illustration guide. Great hints and good info."  
- Borg Warner Automotive

"Great class covered a lot of eye-opening stuff on safety. Would recommend this class for maintenance line techs to help save line down time" - Reckitt Benckiser

"Very good course. A lot of material covered very well, and in a very understandable presentation."  
- Coming Inc.

"I have attended many seminars, by many manufacturers, never have I seen a more informative and effective class. I learned more in two days than I have learned in week-long classes."  
- Charles Cole Memorial Hospital

"Excellent overview of drive theory and troubleshooting procedures. Presented in a manner that was easily understood. Should be able to pass these troubleshooting methods to the shift maintenance personnel in a condensed manner."  
- Cooper Vision Inc.

"I have a very non-electrical background, yet taught in such a way that even I could feel myself beginning to grasp the concepts presented. I am inspired to continue learning." - RJ Williams, Inc.

"Very informative class. Practical knowledge taught. Well informed instructor"  
- Los Angeles DWP

"This is the only drive training that I had that actually made logical sense to me. Excellent review of electronic components and theory! Well worth 2 days of training! Excellent!"  
- Novelis Corporation

"Excellent information, helped to clarify many theories" - Emerson Power Transmission

"Class was great, I know have an open knowledge of drives and how they work."  
- West Irondequoit School District

## \$695.00 / Person

Cost covers tuition, School Materials and lunch both days. Students are encouraged to bring their own Multimeters to the seminar. Classes start promptly @ 8:00AM and finish @ 4:30PM In order to assure registration, all class fees must be received prior to the scheduled seminar date.

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If you would like to reserve a seat(s) to our 2-Day AC Drive Seminar, please fill out the form below and email back to [kburdick@emainc.net](mailto:kburdick@emainc.net) or fax to 607-756-0429.

COMPANY NAME: \_\_\_\_\_

ATTENDEE NAME(S): \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_ EMAIL: \_\_\_\_\_

PURCHASE ORDER #: \_\_\_\_\_

IF PAYING WITH A CREDIT CARD (required for first time customers),  
PLEASE CALL KRISTIN @ 607-756-0424.

#### "Cancellation Policy"

EMA reserves the right to cancel a scheduled class at any time due to low enrollment. In this situation the student will be asked to reschedule or the tuition cost will be refunded. EMA is not liable for any charges incurred by the customer (i.e.-airline, hotel, and rental car) due to cancellation. Payment is required at the time of registration. Cancellation fee for customers: if canceling within 1 week of the scheduled class is 100% of the total.