

## Hands-on Workshop

# Motor & Drive Measurements

## Hands-on with new Fluke MDA 550 Motor Drive Analyzer

### Who Should Attend?

Technicians and engineers making electrical measurements on Variable Frequency Drives (VFDs).

### What You Will Learn

- A range of measurements to identify electrical issues that can prevent the VFDs from functioning correctly or cause damage to other equipment.
- How non-linear loads and harmonics effect measurements in electrical power systems.
- Why traditional test tools can give incorrect readings on VFDs.

### Class Outline

- I. Introduction
  - a. Measurement Safety Standards
  - b. Review PWM Inverter and Basic Waveforms
- II. Input Measurements (Line Side of VFD)
  - a. Measurement Tools
  - b. Unbalance, Harmonics, Power Factor
- III. Drive Output Measurements
  - a. Measurement Tools
  - b. Pulse-Width Modulation (PWM),  $dV/dt$ ,
  - c. Reflections and Shaft Voltage
- IV. Predictive Maintenance Tools for drive train analysis



ELECTRIC SUPPLY & EQUIPMENT CO.



The Fluke MDA 550 Motor-Drive Analyzers save time and eliminate the hassle of setting up complex measurements, while simplifying the troubleshooting process for variable frequency drives.

### Schedule & Registration

**Time:** 8:30 AM – 1:00 PM

### Dates & Locations:

ES&E Apex ..... 5/12  
1000 Classic Road  
Apex, NC 27539

ES&E Rocky Mount ..... 5/13  
147 Red Iron Road  
Rocky Mount, NC 27804

ES&E Greensboro ..... 5/14  
1812 E. Wendover Ave  
Greensboro, NC 27405

**Cost:** \$480.00  
Lunch Included

### To Register Contact:

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### Price Includes

- Fluke 376 FC ac/dc Clamp Meter with iFlex™
- Transmit results wirelessly via Fluke Connect®
  - Log and trend measurements

