

AGENDA

ADVANCED INDUSTRIAL ELECTRICITY: DISTRIBUTION, GROUNDING, MOTORS, DRIVES, AND STARTERS



COURSE OVERVIEW:

This two-day advanced class is designed for Instrumentation and Electrical Technicians who maintain and troubleshoot various electrical systems within their facility. These individuals will walk away with a strong fundamental understanding of electrical safety, AC & DC electrical theory, multimeters, electrical for instrumentation, electrical distribution, VFDs & starters, motor theory, and various testing methods. The class is conducted at THE UNIT, TechStar's fully functional verification unit where individuals will have the opportunity for hands-on experience through wiring, testing, and troubleshooting panels and electrical circuits.

ELECTRICAL DISTRIBUTION

- How the substation effects our equipment and the grid
- Switchgear Arrangements
- Vacuum Circuit Breakers
 - Dead tank vs. Live tank circuit breakers
- Protection Relays
 - Feeder, Transformer, Motor, Generator Protection Relays
- Reading One-Line Diagram

GROUNDING

- Grounding vs. Bonding
- Importance of Grounding

TRANSFORMERS

- Different types of transformers and their uses
- Transformer theory

VARIABLE FREQUENCY DRIVES (VFDS)

- What are they and why do we use them?
- VFD Theory
- Understanding different types of VFDS
 - Power Cell, Rectifier, DC to DC, AC to DC
 - Troubleshooting

MOTOR STARTERS (ACROSS THE LINE & SOFT START)

- Starter theory overview
- What is an Across the Line Starter?
- What application uses them and why
- What is a Soft Start?
- Why we use Soft Starters and the customer impact

MOTOR THEORY

- Overview of the different variations of motors
- Motor Nameplate
- Motor Theory
 - Windings, Poles, Capacitance, Rotor, Stator, etc.
- Motor Testing
 - Energized and De-Energized
- Power Quality

TESTING METHODS

- Megger (Insulation Resistance)
- PdMA
- Surge
- High Potential (HiPot – Insulation to Ground)

FOR MORE INFORMATION VISIT OUR WEBSITE OR CONTACT
OUR CUSTOMER EXPERIENCE COORDINATOR, EMILY JONES



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