

Learn About:

- Advanced Skills for Electrical Troubleshooting
- Testing Field Components: Hands-on Exercises
- Build and Troubleshoot Advanced Motor Control Circuits
- Motor Troubleshooting and Preventative Maintenance
- Troubleshooting Variable Frequency Drives (VFDs)
- Power Quality Problems

Advanced Electrical Troubleshooting



A 2-Day course designed for workers looking to gain additional understanding of complex controls and control circuits

Reserve your space now! 1-877-978-7246

Check us out online at **live.tpctraining.com** for a complete listing of all seminars coming to your area.

This seminar is also available as an **Online Simulcast** or can be brought **On-Site to your facility.**



SEMINAR OVERVIEW

This two-day course is designed for electrical maintenance workers looking to gain additional in-depth hands-on understanding of complex controls and control circuits. It is recommended that this course to be taken only after completion of the Electrical Troubleshooting & Preventive Maintenance course.

Hands-on lab activities are the focus of this course. Throughout the day, participants will troubleshoot on a large variety of systems components, ranging from forward/reversing motor control circuits to proximity switches and float switches. Anyone who wants a chance to spend quality hands-on time and build expertise with components seen every day throughout their facilities will gain a great value from this course.

WHAT YOU WILL TAKE HOME

- Comprehensive classroom materials
- A Personalized Training Certificate with 0.8 TPC Training Continuing Education Units for each day attended, 1.6 for both days.
- All the information you need from asking our instructors specific questions about your own unique equipment or facility.

CONTINUING EDUCATION

Upon completion of this seminar, the student will receive a Certification of Completion and .8 TPC Training CEUs per day attended. Most employers and many government agencies accept TPC Training CEUs to fulfill their continuing education requirements. If the student needs CEUs to renew a state license, please contact us at 303-867-5039 to ensure the state licensing board has approved the seminar. If we are currently not approved by your state licensing board, we are happy to begin the process as long as we receive your request at least one month before the training date.

TRAINING PHILOSOPHY

TPC Training's curriculum is designed to provide complete coverage of essential industrial maintenance skills, across a full range of electrical training, HVAC, plant management, and mechanical & industrial topics. Our "see, touch, do" instructional approach allows us to impart practical skills in an intensive format.

The most vital part of our seminar format is the coverage that goes beyond the course outline. Our small class sizes allow each instructor to tailor the course to address students' individual needs, concerns, and experience levels. Our instructors deliver content with hands-on exercises, demonstrations role-playing, visuals, and case study discussions.

DISCUSSION TOPICS

Advanced Skills for Electrical Troubleshooting

- Requirements per the National Electrical Code®
- Overview of Motor rules per article 430 in the NEC
- Learn to navigate and troubleshoot from multiple page electrical drawings
- Using both NEMA and IEC Electrical Drawings for Troubleshooting
- Hands-on component troubleshooting using an electrical meter
- Learn advanced features of multimeters
- Learning to ask the right questions and the correct way to approach troubleshooting

Testing Field Components: Hands-on Exercises

- Inductive, Capacitive and Magnetic proximity sensors
- Photoelectric sensor retroreflective/ visible red-light emission
- Float, Limit, and Selector Switches
- Control Relays
- Motor Starter Contactors
- Overload Devices
- Forward/Reversing motor starter
- Solid State Timers
- Auxiliary Contact Blocks
- Indicator Lamps
- Push Buttons
- Circuit Breakers

Build and Troubleshoot Advanced Motor Control Circuits – Hands-on Exercises

- Multiple Stop Start Stations
- Forward Reversing Circuits
- Level Control Circuits
- Test and understand all components
- Learn how to quickly troubleshoot
- Make field changes based on changes in the schematics
- Add remote control capabilities

Motor Troubleshooting and Preventative Maintenance

- Troubleshooting Single Phase and Three Phase Motors
- Troubleshooting DC Motors
- Important Motor Nameplate Parameters
- Preventive Maintenance for Motors
- Proper Tools for Motor Troubleshooting

Troubleshooting Variable Frequency Drives (VFDs)

- VFD Terminology
- VFD Basic Operation
- Major Components
- Common Problems & Corrective Actions

Power Quality Problems

- Sources of Power Quality Problems
- Troubleshooting Power Quality Problems
- Harmonics
- Phase Unbalance

SEMINAR FEE & AGENDA

This 2-day course is just \$1195 (Earn 1.6 CEUs)

7:30 am	Registration
8:00 am	Class Begins
12:00 -1:00 pm	Lunch (on your own)
4:30 pm	Class Ends

NO RISK REGISTRATION & MONEY-BACK GUARANTEE

You can reserve your space in the class at any time and cancel without penalty. Cancellations made more than 14 days prior to the seminar may be refunded or rescheduled. Cancellations made within 14 days may be rescheduled for any future topic and/or date. If you're not satisfied with the course, we'll promptly refund your payment.

JOIN OUR CLASSROOM SEMINARS FROM VIRTUALLY ANYWHERE

live.tpctraining.com/simulcast

Our simulcast option allows students to connect to a live classroom seminar via a web link, with the ability to participate fully in the classroom dialogue, exercises, and Q&A. Online participants get all the benefits of the full classroom experience, plus the convenience of remote access.

Features include

- Two full days of live, interactive instruction from a TPC Training instructor
- All classroom materials in PDF format
- Certificate of completion for 16 hours of live training
- Full technical support to ensure your online experience is a rewarding one

BRING THE TRAINING ON-SITE TO YOUR FACILITY

live.tpctraining.com/on-site

Every public seminar class in our Course Catalog can be conducted on-site, with the same expert instructors. To arrange an on-site training, call or email us at onsite@tpctraining.com.

Some Advantages of On-Site Training

- Cost Savings — Save time and travel costs by keeping workers on-site
- Customized Content — Tailor the seminar to your facility and equipment
- Flexibility — Accommodate multiple shifts and different start and end times

