

Transformer School and Pre-Conference

January 23–26, 2024



MMUA Training Center
Marshall, MN

Transformer School—at a glance

Transformer School overview

Three-phase transformer connections

The three-phase course will start with the basics of transformers, including turns ratios, polarities, calculations, connections, and troubleshooting.

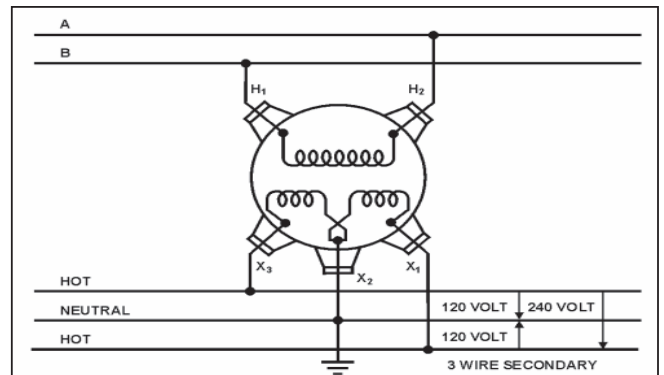
Participants will learn about the basic three-phase systems with some basic phasor diagrams and explain the relationship of the phasor to the transformer itself.

In the hands-on portion of the course, participants will work with miniature transformers that are energized and will blow fuses, in order to experience what happens when something is wired incorrectly.

The class will continue to build on the miniature transformer banks and work on troubleshooting. Additionally, motor rotation as it relates to three-phase systems will be discussed, as well as ways to prevent voltage surge when switching a three-phase bank.

Upon completion of the three-phase transformer connections class, participants should have a good understanding of the following topics, related to transformers:

- Basic three-phase connections
- Delta connection
- Wye connection
- Open delta connection
- Three-phase troubleshooting



About the Pre-Conference

Basic single-phase transformer connections and theory

The pre-conference course is intended to serve as a basic or refresher course on the fundamentals of single-phase transformer connections and theory. The course includes classroom and hands-on instruction on topics such as safe work practices, transformer theory, basic calculations, connections, sizing, and troubleshooting.

This course would be helpful for anyone involved with the electric line crew—from apprentice lineworkers to employees from other departments that assist as a ground person. The pre-conference course can also benefit any lineworker who desires to enhance their knowledge of transformers prior to attending the rest of the school! Please note that separate registration is required for the pre-conference.

Program details

Schedule

Pre-Conference

Tuesday, January 23

12:00-1:00 Registration

1:15-4:00 Basic single-phase connections

Wednesday, January 24

8:30-11:30 Basic single-phase connections

12:00-1:00 Lunch served at Training Center

Transformer School

Wednesday, January 24

12:00-1:00 Registration

1:00-4:00 Three-phase transformer connections

Thursday, January 25

8:30-12:00 Classroom and hands-on training

12:00-1:00 Lunch served at Training Center

1:00-4:00 Classroom and hands-on training

Friday, January 26

8:30-12:00 Classroom and hands-on training

Schedule subject to change without notice.

Certificate of achievement

Attendees earn a certificate of achievement for their participation. Watch for an email notification upon completion of the course.

Hotel information

The AmericInn and EverSpring Inn in Marshall offer special pricing for participants based on availability. Please ask for MMUA's reduced rate when making your reservation.

Visit [MMUA's website](#) for more information.



About the instructor

Transformer expert **Scott Meinecke** will be returning to instruct. Scott has been training on the topic for more than 25 years, and he is a master at explaining complicated principals in such a way that they can be more easily understood.

What do I need to bring?

Please bring appropriate attire and materials, including:

- Safety glasses
- Secondary rubber gloves
- Fire-resistant clothing
- Volt/amp meter
- Calculator
- Notebook and pen/pencil

Registration information

Pre-Conference

- Member—\$145 per person
- Non-member—\$275 per person

Transformer School

- Member—\$735 per person
- Non-member—\$920 per person

Registration fee includes school tuition, materials, refreshment breaks, and a certificate of attendance. Registration fees increase \$50 on December 22, 2023.

To register, visit mmua.org/event/transformer-2024.

**Register by December 21, 2023 for best rate.
The registration deadline is January 4, 2024.**