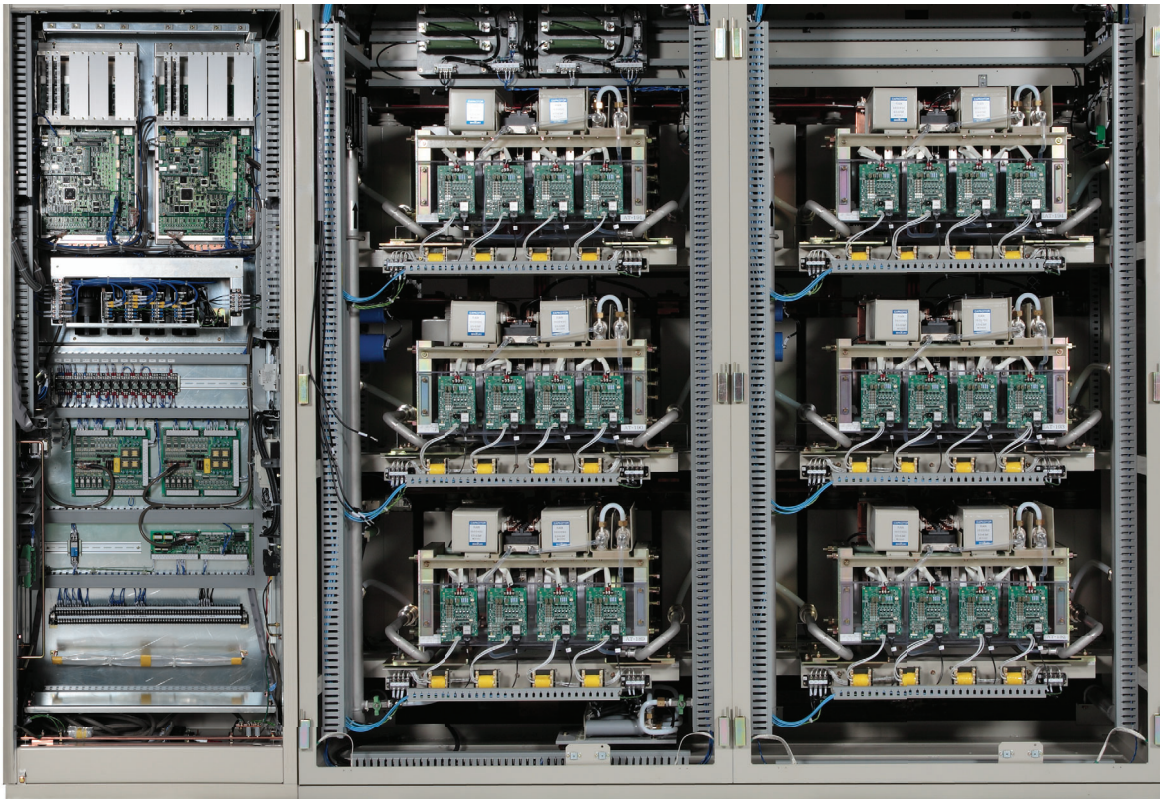


## Maintenance Training



### Location: Roanoke, Virginia

- 4½-day training course for engineering and maintenance personnel
- Drive system hardware and software operation, maintenance and troubleshooting
- Hands-on classroom and lab exercises
- Presented by experienced industry service engineers

### Students will learn:

- ✓ Fundamentals of operation for the TMdrive®-70 drive and motor system
- ✓ To monitor, maintain and troubleshoot the TMdrive®-70 drive system
- ✓ To recognize normal and abnormal drive system operation
- ✓ The terminology and meaning of the diagnostic messages
- ✓ To quickly diagnose and identify externally-connected equipment failures
- ✓ To replace and reconfigure components
- ✓ Preventive maintenance procedures

# TMdrive-70 Maintenance Training

## Who should attend?

Qualified engineers and technicians who wish to gain an understanding of the TMdrive®-70 medium voltage drive system will benefit from this course.

## Course Overview

The TMdrive®-70 course provides instruction on the drive system hardware and software for engineering and maintenance personnel to understand the operation, maintenance, and troubleshooting. Hands-on classroom and lab exercises include hardware identification and the software tool – GE CSS Toolbox or TMdrive®-Navigator (TMdN).

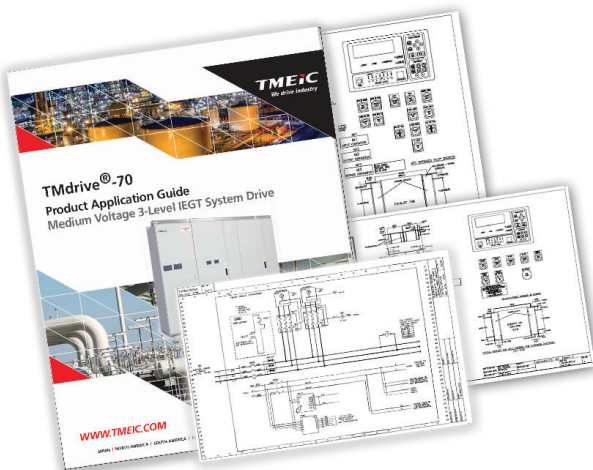
*This class does not cover installation and commissioning of the equipment.*

## Prerequisites

- A basic working knowledge of 3-phase electricity, variable speed drives, motors and controls
- A working knowledge of sound safety procedures
- Reasonable personal computer and Microsoft® Windows® skills
- Course materials will be presented in English

## Student Materials

- Class presentations
- TMdrive®-70 technical manuals
- TMEIC Drive System Elementary and Drive Interface drawings



## Topics

### Fundamentals of PWM variable speed drives

- Power Conversion
- Induction and Synchronous Motor Theory

### Review of the project and drive documentation

### Description and definition of terminology and acronyms used

### Hardware Overview

- Function and designation of each component
- Where to find the component on the electrical drawings
- Physical location of each component
- How to tell if this component is not functioning properly
- How to change out and replace the component
- How to configure the replacement component, if either hardware jumper or software download is required
- Note - the TMdrive®-70 training drive does not include the bridge cell stacks. Training on changing the cell stacks will be done with photos.

### External Equipment and I/O

### Cooling water and bearing lubrication systems

### Learning the drive software

- General information
  - File permission
  - Parameter/variable structure
- Features
  - Operational control panel
  - Help
  - Trending
  - Animated/Live Block Diagram

### Communication Networks

- PLC communication
- Diagnostic, and configuration network

### Inspection and Maintenance Schedules

### Running Maintenance and Diagnostic Tests

### Protective Functions

### Troubleshooting

- Comparing normal vs. abnormal operation
- Faults and Alarms
- Traceback

### Spare and Renewal Parts

- What is recommended
- How to order

### Contacting our 24/7 Customer Support Team For more information please contact:

Darrin Quesenberry: 540-283-2239

Email: [training@tmeic.com](mailto:training@tmeic.com)

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