

PowerFlex 7000 Medium Voltage Drive Operation and Maintenance

OEM: Rockwell Automation • Duration: 4 Days (32 hrs) • Code: MV7000-LD

COURSE MODULES & TOPICS

Course Purpose

- Adopt proper safety measures while working on MV equipment
- Recognize proper drive and motor operation
- Understand the significance of all the key parameters
- Troubleshoot drive malfunctions
- Remove and replace power components of the PowerFlex 7000 Adjustable Frequency AC Drive

Objectives

- MV products overview
- PF7000 drive topology
- Power components
- Safety training (LOTO)
- Power supplies (classic and ForGe)
- PF7000 classic and ForGe control boards
- Voltage and current monitoring (classic and ForGe)
- Drive cooling system and operation
- Maintenance and troubleshooting
- Labs: Device replacement
- Resistance checks
- Control voltage checks
- Classic and ForGe control board checks
- Review classic and ForGe drawings
- HMI PV550 / PV1000
- Uploading drive setup and control data
- Downloading firmware

Prerequisites

- Working knowledge of electricity, and knowledge of electrical and industrial safety (including PPE requirements and safe practices)
- Comprehensive knowledge of electrical principles and circuits
- Practical experience using a multimeter, ammeter and oscilloscope

Student Materials

- Student Manual includes the key concepts, definitions, examples, and activities presented in this course
- Lab Book provides learning activities and hands-on practice. Solutions are included after each exercise for immediate feedback. In this job aid, you can immediately apply what you learn to your own work.

Course Agenda

Day 1

- PowerFlex 7000 Drive Product Overview
- PowerFlex 7000 Drive Topology
- PowerFlex 7000 Drive Power Components – Drive Component Identification Lab
- PowerFlex 7000 Drive Resistance Checks – Drive Resistance Checks and Device Replacement Labs

Day 2

- PowerFlex 7000 ForGe Drive Control Power – Power Supply Component Identification, Measurement, and Replacement Labs
- PowerFlex 7000 ForGe Control Hardware – Drive Control Hardware Component Identification and Replacement Labs
- PowerFlex 7000 Drive Communications
- Voltage and Current Monitoring – ForGe Control – Voltage and Current Monitoring Identification Lab

Day 3

- PowerFlex 7000 Drive Cooling – Drive Cooling Component Identification Lab
- PowerFlex 7000 Drive Operation – PowerFlex Drive Operation Gate Test, System Test, and Current Test Labs
- PowerFlex 7000 Drive Tuning – Rectifier Tuning, Motor Impedance Tuning, and Motor Flux/Speed Regulator Tuning Labs

Day 4

- PowerFlex 7000 Drive Terminal Forge Shell Lab – PowerFlex NetServer Interface (PFNI) IP Address Lab
- Firmware Installation Lab
- Black Box Data Collection Lab
- Diagnostic Trending Lab
- Alarm and Fault Troubleshooting Demo/Lab
- Liquid-Cooled Drive Maintenance and Commissioning (Optional half-day for students with liquid-cooled drives)