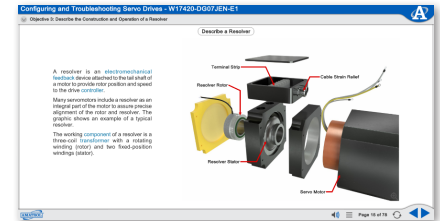


# AC Electronic Drive Learning System - AB PowerFlex® 755

970-DRV1F



Interactive Multimedia Curriculum



Student Reference Guide

## Learning Topics:

- Introduction to AC Variable Frequency Drives
- VFD Safety
- Motor and Feedback Wiring
- VFD Architecture
- HIM Basics
- HIM Control
- Drive Faults and Alarms
- Drive Configuration using an HIM
- Discrete I/O Control
- Analog I/O Control
- Drive Communications
- CCW Software Drive Programming
- Acceleration-Deceleration Control
- Sensorless and Flux Vector Control Modes
- Studio 5000® Drive Programming
- Basic Drive Troubleshooting Tests
- Drive Systems Troubleshooting

Amatrol's AC Electronic Drive Learning System - AB PowerFlex® 755 (970-DRV1F) provides comprehensive AC variable frequency drive (VFD) training using the powerful Allen-Bradley® PowerFlex® 755 VFD. This industrial AC electronic motor drive delivers accurate control of speed, position, and acceleration in applications such as CNC machine tools, conveyors, robots, mixers, and presses. The 970-DRV1F gives users hands-on troubleshooting experience with electronic drive motor control circuits under realistic conditions with circuit faults that can be introduced throughout the system.

The AC Electronic Drive training system includes the Allen-Bradley® PowerFlex® 755 VFD (with V/Hz, Sensorless Vector, and Flux Vector control), three-phase motor, incremental encoder, Human Interface Module (HIM) programming module, and Amatrol's exclusive FaultPro computer-based fault insertion system. The system features Amatrol's eLearning curriculum that begins with the basics of VFD architecture, safety, and wiring before moving on to more advanced topics related to HIM control; discrete and analog I/O control; drive communications and programming; and drive and system troubleshooting. Users will learn dozens of relevant hands-on skills, such as wiring a three-phase motor and a dual-channel incremental encoder to a PowerFlex® 755 drive; configuring and operating a PowerFlex® 755 drive using three-wire control; and configuring and testing a PowerFlex® 755 drive in a Studio 5000® project.





970-DRV1F with FaultPro

## Teach Advanced Troubleshooting Skills

The AC Electronic Drive Learning System - AB PowerFlex® 755 teaches advanced troubleshooting skills via Amatrol's exclusive FaultPro computer-based fault insertion. With FaultPro, instructors can insert a wide variety of faults into the system, such as those related to power loss, motor overload, encoder loss, over current, excessive load, and dozens more! This creates a more realistic troubleshooting environment for students.

## Comprehensive VFD Training in a Sturdy Unit

The AC Electronic Drive Learning System features a sturdy design that's easy to transport between multiple training locations. Users will appreciate the simplicity of its design and convenience of its layout. The Operator Panel puts all displays, indicator lights, buttons, and switches within easy reach. It also includes a USB port and two Ethernet ports. In addition to the Allen-Bradley® PowerFlex® 755 VFD, the VFD Panel contains a printed diagram of the inside of the VFD circuit board, as well as high-voltage test points and connections to the motor and encoder.



970-DRV1F Operator & VFD Panels



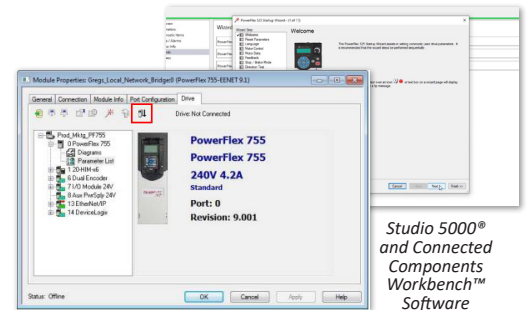
Allen-Bradley®  
PowerFlex® 755 VFD

## Real Industrial Equipment, including the Allen-Bradley® PowerFlex® 755 VFD

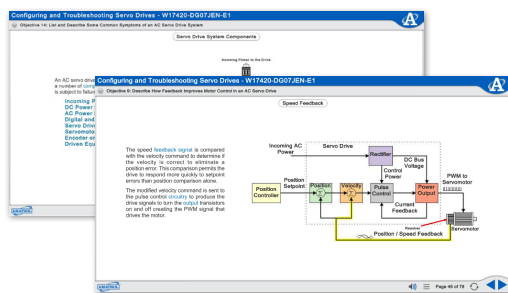
The AC Electronic Drive Learning System teaches users relevant hands-on skills using real industrial equipment they'll encounter in the workplace. For example, the system features the powerful Allen-Bradley® PowerFlex® 755 VFD. This versatile VFD combines multiple drive functions (general purpose/vector/positioning) that previously required three separate drives to teach. The system also includes a three-phase motor, incremental encoder, and HIM programming module.

## Teach Advanced AC Electronic Drive Communications and Programming

The AC Electronic Drive Learning System teaches advanced VFD communications via the Allen-Bradley® PowerFlex® 755 VFD's embedded Ethernet port, which allows for better management of drive data over Ethernet/IP networks. Users will also learn advanced programming skills using two different types of industry-leading programming software from Rockwell Automation: Connected Components Workbench™ and Studio 5000®.



Studio 5000®  
and Connected  
Components  
Workbench™  
Software



## Multimedia Student Curriculum with Dozens of Hands-On Skills

Amatrol's eLearning curriculum features a highly-interactive, multimedia format that includes stunning 3D graphics and videos, voiceovers of all text, and interactive quizzes and exercises designed to appeal to learners with different learning styles. The 970-DRV1F curriculum starts with the basics of VFD architecture, safety, and wiring before moving on to more advanced topics related to HIM control; discrete and analog I/O control; drive communications and programming; and drive and system troubleshooting. The combination of theoretical knowledge and hands-on skills solidifies understanding and creates a strong basis for pursuing more advanced skills.

## Student Reference Guide

A sample copy of the AC Electronic Drives Student Reference Guide is also included with the system for your evaluation. Sourced from the system's curriculum, the Student Reference Guide takes the entire series' technical content contained in the learning objectives and combines them into one perfectly-bound book. Student Reference Guides supplement this course by providing a condensed, inexpensive reference tool that learners will find invaluable once they finish their training, making it the perfect course takeaway.

