

Before the First Fault

VFD Installation, Commissioning,
& Reliability Training

**VFDS DON'T FAIL.
INSTALLATIONS FAIL THEM.**



**Intermediate &
Advanced Program | 14
Hands-On Labs | Copy
of the Book | Certificate
of Completion**

WHY THIS COURSE COVERS INDUSTRIAL, WATER, REFRIGERATION, & HVAC

- **The five-phase commissioning method - motor running instantly**
- **Installation reliability principles - 80% fault reduction**
- **Application configuration - VT, CT, high speed, high inertia**
- **Structured troubleshooting - not reset and hope...real root causes**
- **PID control - not mysterious when you try it live**

Its easy..begins at

- **You provide coffee, lunch, & location**
- **Provide 8 to 12 Students**
- **I come to you**

\$1400 per seat

- **travel & expenses
included**

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National Coverage

ABB sponsored HW



"I've been wiring drives for 15 years and never understood why some installations trip in the first week and others run for a decade. Now I do." 8-year HVAC tech.

"We sent six technicians. Within a month, our first-week callback rate on new VFD installs dropped by half. The reliability discussion alone was worth the investment" 12-year Maint. mgr.

"Best part was the troubleshooting lab. I've been the guy who resets and hopes. Now I actually read what the drive is telling me." 2-year Ethanol elec.

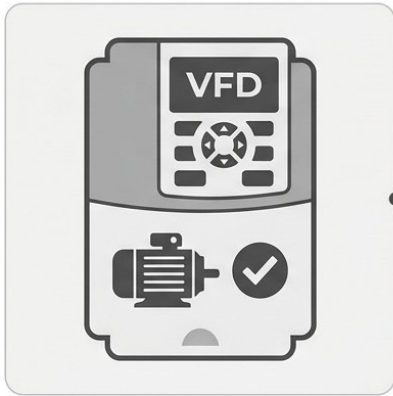
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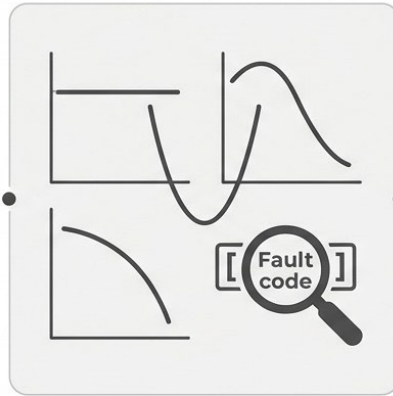
Variable Frequency Drive VFD Training Progression

Day 1



Commission It

Day 2



Diagnose It

Day 3



Connect It

Who should attend:

Field technicians and electricians
Plant and maintenance engineers
System integrators
Industrial distribution specialists
Controls technicians



About Me



Website

Pricing Details

Cost per Student:

- Days 1 & 2: **\$1400**
- Day 3: **\$700** (Optional)
- Materials: **included**

Notes:

- **Anywhere in the US**
- Insured
- Custom options
- CC or Net 15

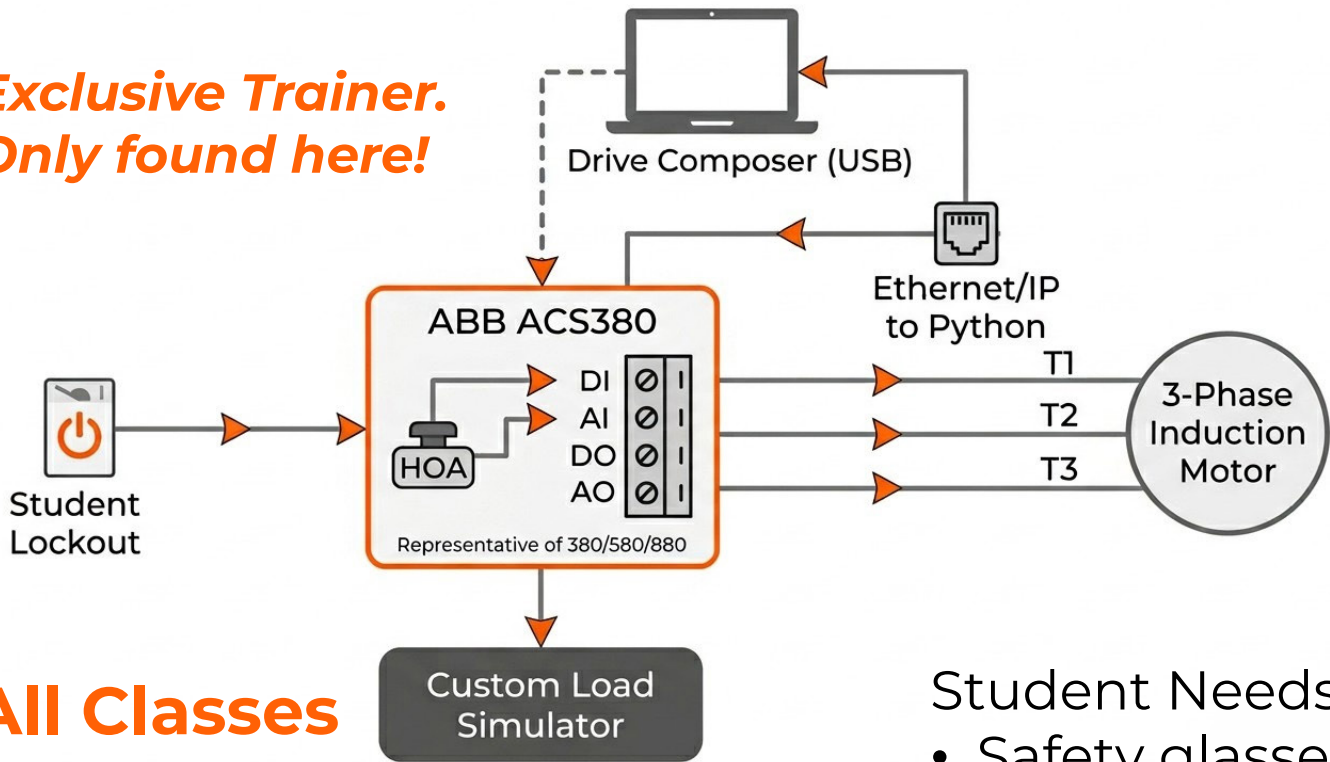
**Simple pricing for
serious training**

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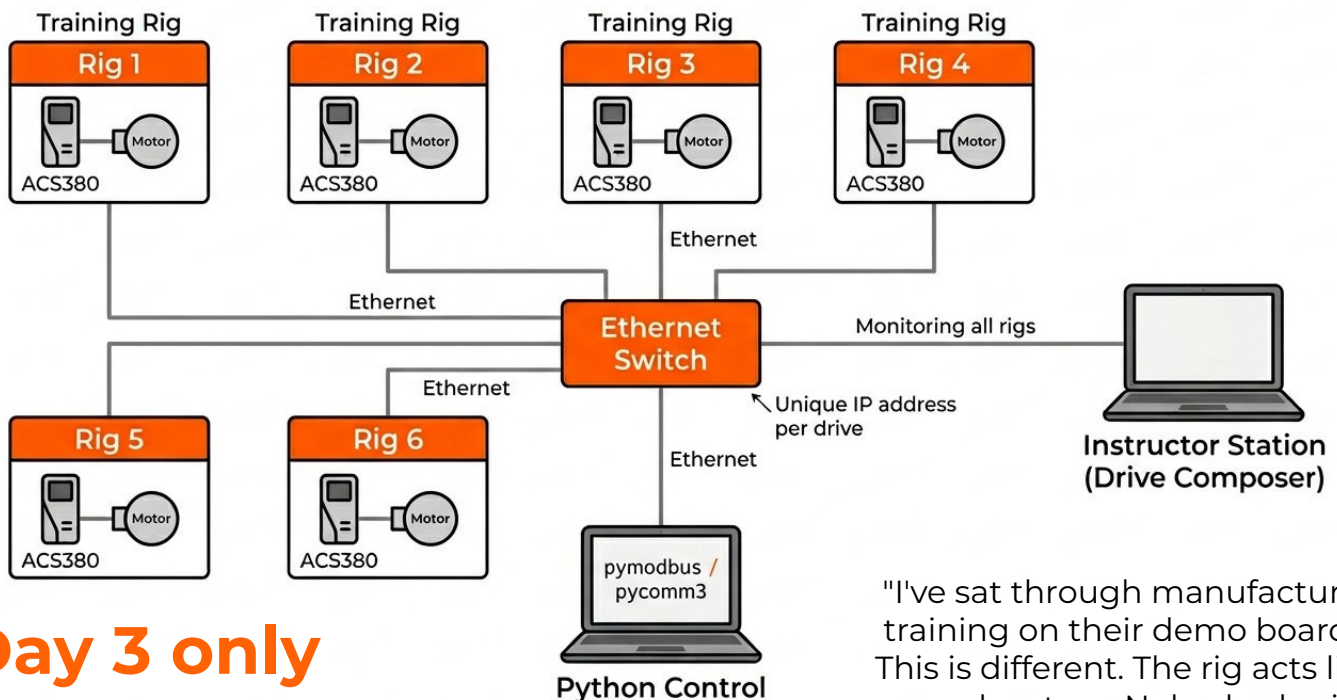


**Exclusive Trainer.
Only found here!**



- Student Needs:
- Safety glasses
 - Stamina...

All Classes



Day 3 only

"I've sat through manufacturer training on their demo boards. This is different. The rig acts like a real system. Nobody else is doing that." 20-yr controls engineer

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Day 1 – Fundamentals, Reliability, and the Commissioning

- VFD Fundamentals: Power Conversion, V/Hz, PWM, and the Motor-Drive Relationship
- Installation Reliability: Location, Environment, Enclosure, and Thermal Management
- The Electrical Foundation: Cables, Grounding, EMC, and Control Wiring Separation
- The Five Commissioning Phases and the Setup Sequence
- Variable Torque Loads: Affinity Laws, Energy Savings, and Sizing
- Lab 1: Motor Model Creation (Input Verification, Nameplate Data, ID Run, Auto Tune)
- Lab 2: I/O Setup and First Rotation (Discrete and Analog I/O, HOA, Baseline)
- Application Nuance: VT versus CT, Torque Curves, and How the Setup Sequence Adapts

Day 2: Application Profiles, Troubleshooting, and PID Control

- Load Profile: Variable Torque, Constant Torque, High-Inertia, and High/Low Speed
- Cross-Scenario Comparison: What Changes and What Stays the Same
- Troubleshooting: The Five-Step Diagnostic Sequence and Six Fault Categories
- Lab 3: Application Configuration (Three Load Profiles, Parameter Comparison)
- Lab 4: Diagnostics and Troubleshooting (Instructor-Induced Faults, Structured Diagnosis)
- PID Theory: Open-Loop versus Closed-Loop, P/I/D Actions, Overshoot, and Error
- Lab 5: PID Simulation (Adjust Gains, Predict and Verify)
- Lab 6: Drive Composer Connection (Real-Time Monitoring, Trend Recording)
- Lab 7: Live PID Demo (Open-Loop versus Closed-Loop with Normalized Feedback)
- AI-Assisted Troubleshooting Introduction and Maintenance Fundamental

Day 3: Advanced PID Tuning and Communications (Optional)

- Lab 8: PID Tuning: Heat Process (Slow Response, Anti-Windup)
- Lab 9: PID Tuning: Cooling Process (Inverse Response, Reverse-Acting PID)
- Lab 10: PID Tuning: Flow Process (Fast Response, Filtering, Deadband)
- Communications Theory: Modbus RTU versus Ethernet/IP, Architecture, and Protocol Selection
- Lab 11: Classroom Network Build (Connect All Rigs, Configure, Verify, Troubleshoot)
- Lab 12: Modbus Read/Write (Read Parameters, Write Speed References, Security)
- Lab 13: Ethernet/IP Integration (EIP Communication, IIoT Applications)
- Lab 14: AI-Assisted Diagnostics Expanded (Full-Context Prompting, Manual versus AI)