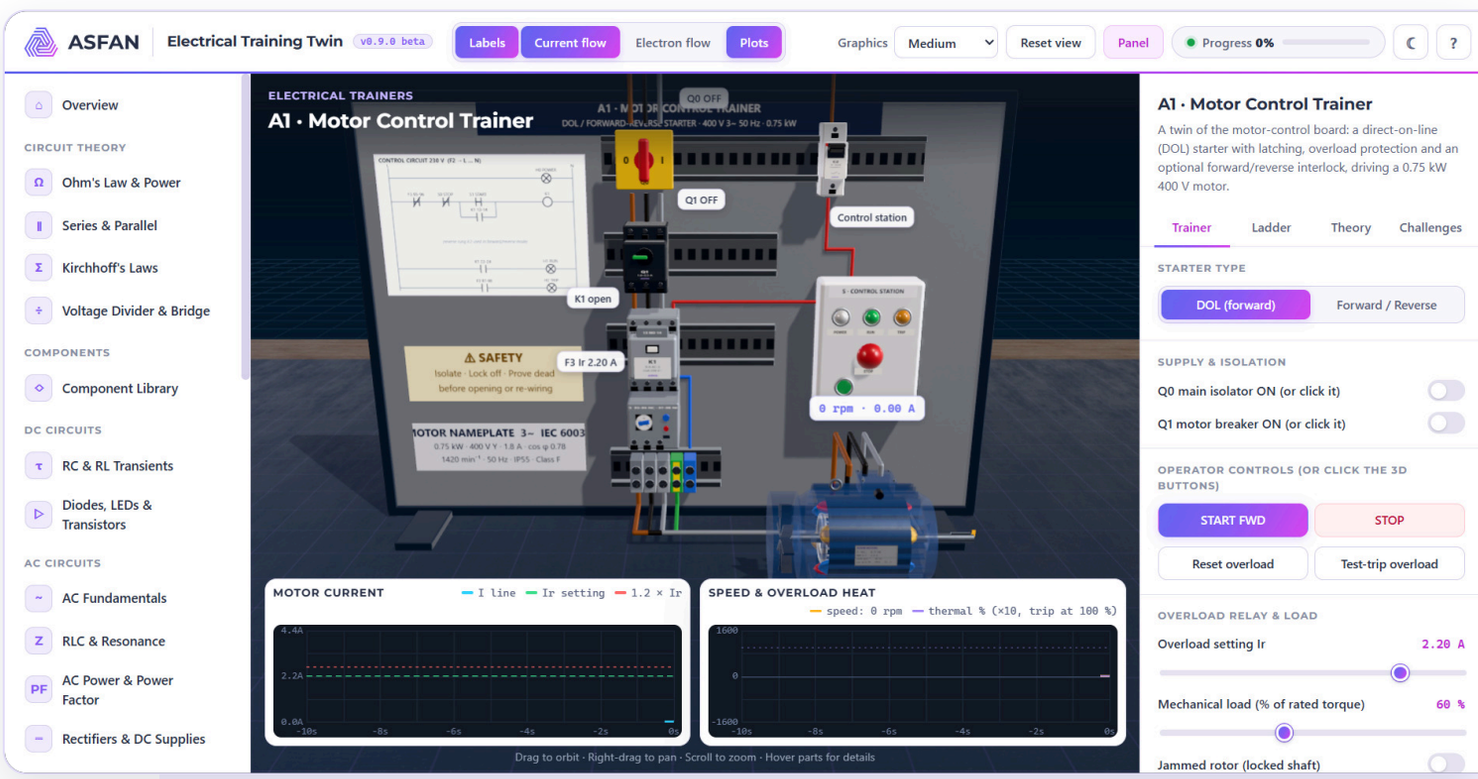
ASFAN

PC EDITION

3D DIGITAL TWIN FOR ELECTRICAL TRAINING

Electrical Training Twin

Twenty-four live 3D labs on any Windows PC. Trainees change a value and watch the circuit answer: current flows, meters move, lamps glow and protective devices trip, all following real circuit laws.



24

interactive 3D labs, from Ohm's law to protection

9

workshop trainer rigs twinned, A1 to A9

92

explained assessment questions across 24 topics

WHY A DIGITAL TWIN

A live circuit, not a slideshow

Every lab is a working simulation. Nothing is pre-recorded: the readings, traces and trips come from the circuit the trainee has just set up, so cause and effect are always in view.

1

See what the meter cannot show

Switch on current flow or electron flow and watch it move through the wiring. Labels name every part, and hovering explains what it does.

2

Lab, theory and challenges together

Each lab has its controls, the theory behind it and a set of challenges that are ticked off as the trainee achieves them.

3

Instruments that behave

Oscilloscope traces, phasor diagrams, trip curves and live readings update as values change.

4

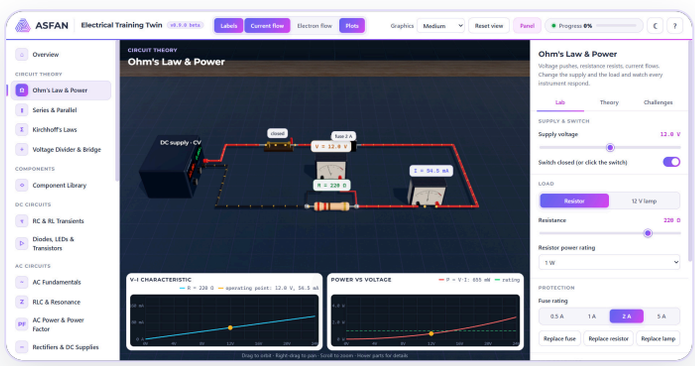
Safe to get wrong

Overload a circuit, cause an earth fault or leave an isolator on. The twin shows the consequence and the trainee tries again.

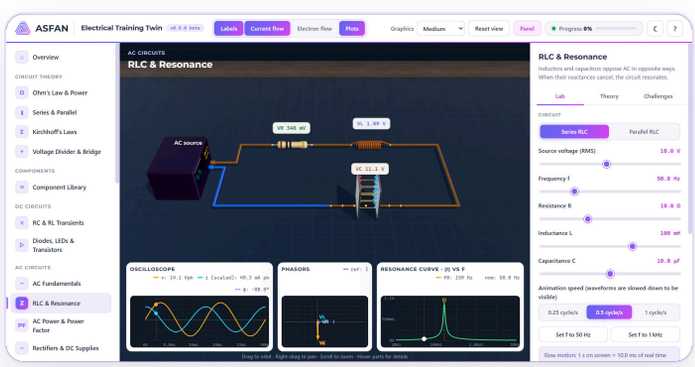
5

Progress that is kept

Completed labs and the best assessment score are saved on the PC for each Windows user.



Ohm's Law & Power. A bench circuit with supply, switch, fuse and meters. The plots follow the operating point.



RLC & Resonance. Oscilloscope, phasors and the resonance curve respond as R, L, C and frequency change.

WHAT IS INSIDE

24 labs and an assessment

Fifteen theory labs take a trainee from Ohm's law to three-phase power and protection. Nine more are twins of the workshop trainer rigs, so the bench can be practised before it is touched.

CIRCUIT THEORY

- Ohm's Law & Power
- Series & Parallel
- Kirchhoff's Laws
- Voltage Divider & Bridge

COMPONENTS

- Component Library

DC CIRCUITS

- RC & RL Transients
- Diodes, LEDs & Transistors

AC CIRCUITS

- AC Fundamentals
- RLC & Resonance
- AC Power & Power Factor
- Rectifiers & DC Supplies

POWER SYSTEMS

- Transformers
- Three-Phase Power
- Electric Motors
- Distribution & Protection

ELECTRICAL TRAINERS

- A1 Motor Control Trainer
- A2 Fault-Finding Trainer
- A3 Electrical Tools & Materials

PLUMBING AND SERVICES

- A4 Plumbing Tools & Fittings
- A5 Water Heater & Booster Pump Rig

SAFETY

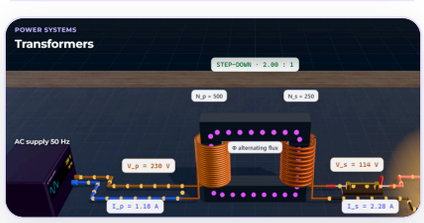
- A6 Electrical Safety Board
- A7 Fire Alarm Training Panel
- A8 Machine Guarding Trainer
- A9 Permit to Work Station

ASSESSMENT

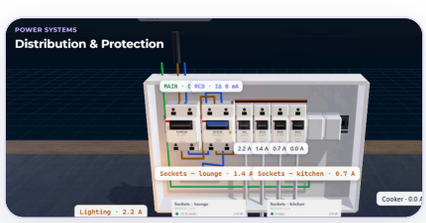
- Knowledge Assessment · 92 questions



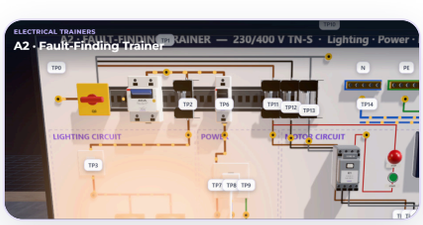
Three-Phase Power
Star and delta loads, line and phase values, with live phasors.



Transformers
Turns ratio, core flux, losses and efficiency under a load you set.



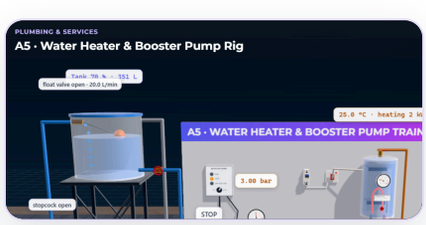
Distribution & Protection
A consumer unit with overloads, short circuits and earth faults to clear safely.



A2 · Fault-Finding Trainer
Hidden faults on three circuits, traced with a multimeter.



A7 · Fire Alarm Training Panel
A four-zone panel with detector tests, call points and fault conditions.



A5 · Water Heater Rig
Roof tank, booster pump and electric heater, with faults to find.

IN THE CLASSROOM

From first lesson to assessment

1

Demonstrate

Project a lab and change values as you teach. A guided tour introduces the screen to new trainees.

2

Practise

Trainees work through the challenges in each lab at their own pace, on a lab PC or at home.

3

Assess

The knowledge assessment draws from 92 questions. Every answer comes with an explanation, and 80 % completes the module.

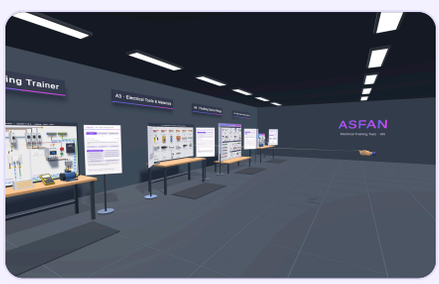
WHAT YOU NEED

Computer	A Windows PC. Runs on integrated graphics; a dedicated graphics card gives the highest quality.
Graphics	Three quality levels, chosen automatically and stepped down if the PC is slow.
Installation	A Windows installer or a portable version that needs no installation.
Internet	Not needed to run the labs.
Display	Light and dark themes, full screen for projection.
Version	0.9 beta.

ALSO IN VR

The same trainers, at real size

The VR edition places the nine workshop trainers in one virtual lab, operated with your hands.



Bring the workshop to every trainee. Ask for a demo.

ASFAN International Trading Company

www.asfanco.com

info@asfanco.com

ASFAN Electrical Training Twin is a training aid. It does not replace supervised practical work or the safety procedures of your workshop. Screens shown are from version 0.9 beta and may change.