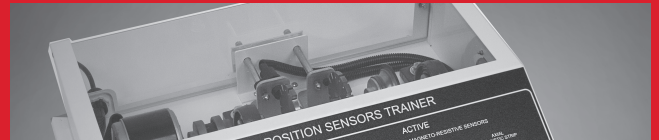# EM-200-25 Speed and Position Sensors Trainer

Discovery

Equals

Achievement

Learners develop diagnostic skills using this blended e-learning and mechanical training aid package. Combining Electude's e-learning modules with ConsuLab's table top sensors trainer creates an effective blended hands-on environment for every level of learner.

Electude's self-paced online lessons combine photo-realistic visuals, text and questions to guide learners to an understanding of operation, diagnosis and testing of some of the most common analog and digital sensors used in today's modern vehicle, including Hall effect and magneto-resistive. Tracking every keystroke, the system measures mastery of the content real-time, providing constant feedback to the learner and the instructor.

Online lessons prepare the learner for success in operating and performing diagnostics with the trainer, which is powered by a variable speed electric motor to create different operating conditions, from zero rpm through both variable and steady speeds. Switches allow the sensors to be connected or disconnected in the circuit for real-world testing. Learners are able to connect to a digital storage oscilloscope (DSO) and project signals under different operating conditions, making this trainer particularly useful for in-class demonstration and practice.

The following items are included with the trainer:

- Radial analog (passive) inductive sensor with adjustable air gap to show effects on operation

- Digital Hall-Effect sensor

- Radial and axial digital (active) magneto-resistive sensors

- Sensor test receptacles for hookup of DVOM and Oscilloscope

- Equipped with sensor disconnect switches for separate testing of both harness side and/or component side of sensor

- Trainer has a bench top design that allows clear student visualization of sensor operation, diagnosis and testing

- Electronically controlled variable speed electric drive motor

- 120V AC/DC power supply included

ELECTUDE

www.electude.com

EM-200-25 SPEED AND POSITION SENSORS TRAINER

ELECTUDE'S E-LEARNING COURSE OVERVIEW

Through the practical assignments, the student learns:

Operation, diagnosis and testing of motion sensors commonly used in automotive systems. Here are some examples:
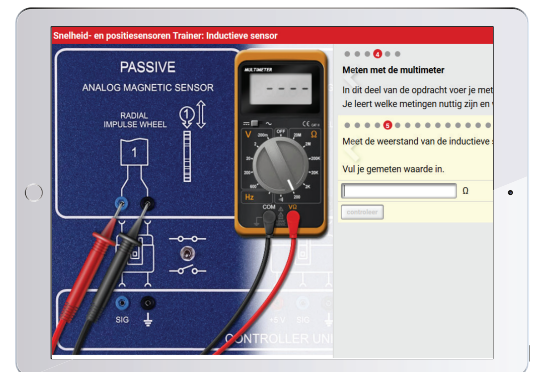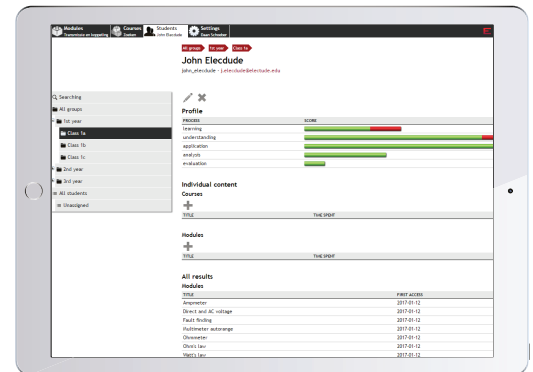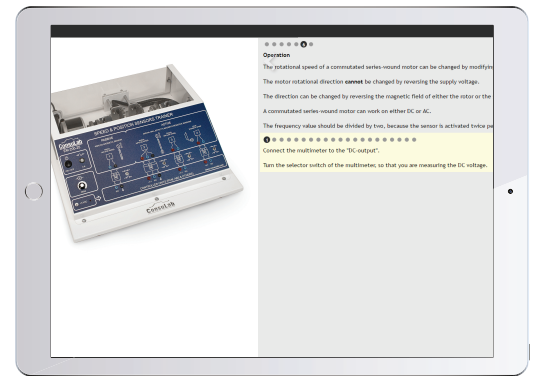
- CKP (Crankshaft Position Sensors)
- CMP (Camshaft Position Sensors)
- VVT (Variable Valve Timing) sensors
- ABS Wheel speed sensors (all types)
- RPM and Vehicle Speed sensors

Practical assignments with the Speed and Position Sensor

- Using a DMM to validate the sensor and electrical circuit
- Using a DMM to measure sensor output signal
- Using a DSO to measure sensor output signal
- Discovering the difference and similarities between Passive and Active Sensors
- Analyze the effect of sensor positioning on sensor output signal
- Synchronization of 2 sensor output signals

Duration

- 4-5 Hours