DEGEM SYSTEMS

AT-3008

Autotronics

Safety Systems Simulator

- Multi-point injection
- Electronic ignition
- ABS 4 channel system
- Engine controls & sensors
- Car air-conditioning & climate control
- Suspension
- Transmission
- Safety systems
- Automotive accessories
- Main Panel
- Multipoint Fuel Injection
- Emission Control
- Airbag Systems
- Electronic Stability Program
- Hybrid Vehicle Systems

Objectives

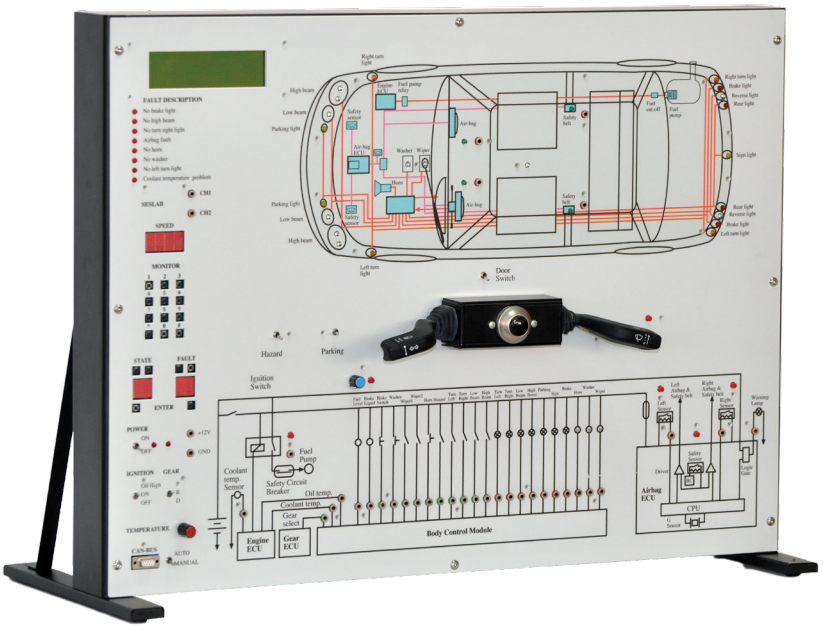
The AT-3008 Automotive Safety Systems Simulator is designed to provide students with automotive training program introducing various systems and real components in modern cars.

The simulator brings a comprehensive view of the entire system in the car, the system's actual components and their interconnection, functions, operation, signals, diagnosis and repair methods under hands-on safe activities.

Description

The simulator includes real and simulated components controlled by internal controller that produces the signals for measurement according to its internal simulating program or according to PC simulation programs.

The simulator's panel is with colored graphics clearly presenting the system components, connections and inter-relations with test points for real measurements and LED's to indicate the component status.



Specifications

TECHNICAL CHARACTERISTICS

The simulator is in a wide metal enclosure with a colored printed circuit experiment panel (80 x 60 x 10 cm), which ensures easy handling and good visibility of the components and the simulation part.

The simulator includes real components and simulation components modules. The experimenting panel includes the system drawings with test points and banana sockets.

The simulator can be operated as a stand-alone system without a PC, guided by experimental book using built in oscilloscope or an external oscilloscope.

The simulator can be connected to a PC in serial communication (RS232 or USB) using CBT courseware and D-SCOPE software for signal display.

A record of the student progress can be recorded on the student PC using the optional DCML software and can be accessed by the instructor for monitoring, course management and records if a local area network (not supplied) is available.

THE SYSTEM INCLUDES

- A power switch with indicating light
- D-SCOPE 2-channel digital oscilloscope
- 7 segment display and control switches, one for fault insertion unit and one for selecting simulation mode
- Eight (8) LED's to indicate troubleshooting state

THE SYSTEM INCLUDES

- Status mode switches and display
- Warning indicating light
- Graphic and alphanumeric LCD display: 64X240 pixels
- Numeric keyboard
- CAN-BUS interface
- Serial or USB communication interface with the PC
- PC / MANUAL switch
- 12V Power adapter
- Digital multimeter
- Operating and simulation switches
- Simulation potentiometers
- Lighting system simulation for head lights, parking lights, interior lights, rear lights, reversing light, turn signaling system
- Windshield wipers and washer system modules
- Airbag simulator with electronic control unit and accelerometer sensor, movement sensors and pneumatic valve warning light for self diagnostics
- Pre-tension actuator of safety belts, collision simulator, seat belt warning light
- Safety tension belts system simulation with electronic control
- Fuel cut-off system simulation with the following components: inertial switch for fuel shut-off
- Simulator of electric fuel pump
- Anti-tilting valve for fuel shut-off
- Simulator of fuel tank of transparent plastic material.
- Fault simulator: microprocessor controlled to insert 8 faults

EXPERIMENTS

This system enables the student to perform several experiments and covers the following topics:

- Main head lights.
- Parking lights, rear lights.
- Turn signaling lights, Reversing lights, stop lights, hazard lights.
- Interior lighting system.
- Electric horns.
- Wipers and washer system.
- Airbag electronic control unit.
- Shock sensors.
- Safety belt tightening.
- Inertial security switch for fuel cut-off.
- Fuel leakage security valve.
- Sensors and indicators: fuel level, reverse gear, oil pressure, coolant temperature, brake fluid level and warning light.

An experiment manual for the student and instructor manual accompany the system.

OPTIONAL ACCESSORIES

- Personal computer with MS-Windows
- DCML (Degem Computer Managed Laboratory)