

Objectives

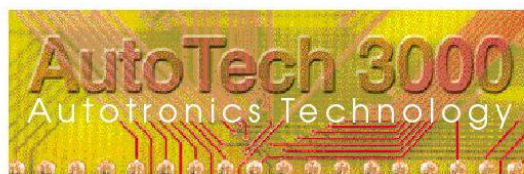
The TPS-3578 Automotive Safety Systems Simulator is designed to provide students with automotive training program introducing various systems and components in modern cars.

The simulator brings a comprehensive view of the entire system in the car, the system's 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 LEDs describing the component status.



M O D U L E

TPS-3578

Safety Systems Simulator

Technical Characteristics

The simulator is in a wide metal case with a colored printed circuit experiment panel (80X60X10 cm) which ensures easy handling and good visibility of the components simulation.

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 its built in oscilloscope or an external oscilloscope.

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

Student PC can be connected to the teacher PC for monitoring, course management and records by SESML software (optional)

The system includes:

- A power switch with indicating light
- SESLAB 2 channel digital oscilloscope
- 7 segment display and control switches. One for fault insertion unit and one for selecting simulation state
- Eight (8) LEDs to indicate troubleshooting state
- 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 & Washer system modules
- Airbag simulator with electronic control unit and date accelerometer, moving sensors and pneumatic valve warning light for self-diagnostic
- Pre-tension actuator of safety belts-operation simulator (test key) - Collision simulator - Warning light signaling the intervention of belts
- Safety tension belts system simulation with Electronic control unit
- 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 experiments and covers the following topics:

- Main head lights.
- Parking lights, Rear lights.
- Turn signaling lights, Reversing lights, Stop lights, Hazard lights.
- The Interior Lighting system.
- Electrical Horns.
- Wipers and Washer system.
- Airbag Electronic Control Unit.
- Shock sensors.
- Safety belt tightening.
- Inertial security switch.
- Fuel leakage security valve.
- Sensors and indicators: Fuel level, Reserve gear, Oil pressure, Coolant temperature, Brake fluid level and warning light.

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



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