

Basic Natural Gas Vehicle Training

Module 4: Introduction to Sensors and Actuators

Lesson 5: Mass Gas and Mass Air Flow Sensors

Lecture: 25 Minutes

Lab: None

Classroom Instructional Objectives:

Upon completion of this unit of instruction the student will be able to:

- Explain the design and operation of mass air and mass gas sensors.
- Compare and contrast mass gas and mass air flow sensor designs.
- Graph the voltage output signals of mass air and mass gas sensors.
- Analyze wiring diagrams specific to flow sensing devices.
- Explain how to test mass air flow sensors.
- Explain how to test mass gas sensor.

Key Classroom Points:

- Explain the design and operation of mass airflow sensors.
- Explain the theory and operation of mass gas sensors.
- Provide specific examples of mass gas and mass airflow sensors.
- Demonstrate how to read wiring diagram sections specific to flow sensing devices.
- Explain how to perform a voltage drop on the ground circuit.
- Explain how to perform a voltage drop on the positive circuit.
- Introduce the testing of sensor reference and signal voltages using a lab scope.

Lab Skill Objectives:

Upon completion of this unit of instruction the student will be able to:

None

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Key Lab Points:

None

Classroom Materials:

- Attendance sheet
- Power Point presentation CD
- Lap-top
- Projector
- Instructor's guide
- White board marking pens
- Projection screen

Handouts:

- Power Point slide materials

Instructor's notes:
