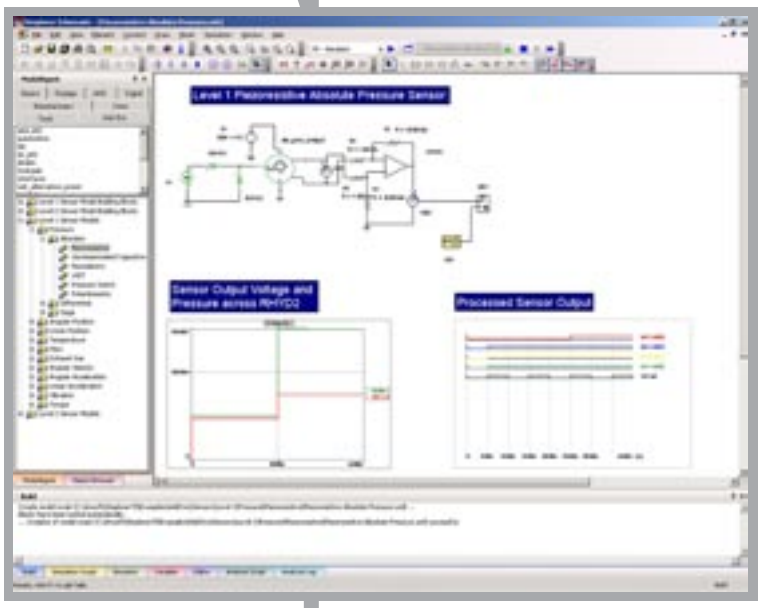
SIMPLORER® LIBRARY

SENSOR MODEL LIBRARY

SIMPLORER's Sensor Model Library includes a set of predefined sensor models commonly found in automotive and aerospace sensing applications. The library provides ideal behavioral models that can be used when simulation speed is the primary concern and non-ideal behavioral models for use when factors such as temperature sensitivity, nonlinearity, and sensor accuracy are paramount. Manufacturer parameters and specifications may be entered directly into the models, allowing users to create specific sensor behavior.

Additionally, the library includes a complete set of building blocks that enable users to create custom sensor models very quickly using an easy-to-use, color-coded format.



Sensor Model Library Benefits

- Easy-to-use and intuitive graphical modeling of sensing applications
- Easy parameterization using wizard technology
- Wide selection of commonly used sensor types from 94 pre-defined sensor models
- Rapid development of custom sensor models using 43 color-coded sensor model building blocks
- Choice of system-level and device-level simulation with multiple model levels
  - Ideal behavior — fast simulating sensor models operating under ideal conditions
  - Non-ideal behavior — for models that demonstrate non-ideal behavior, such as temperature sensitivity, nonlinearity, hysteresis, and measurement error

Sensor Model Library Applications

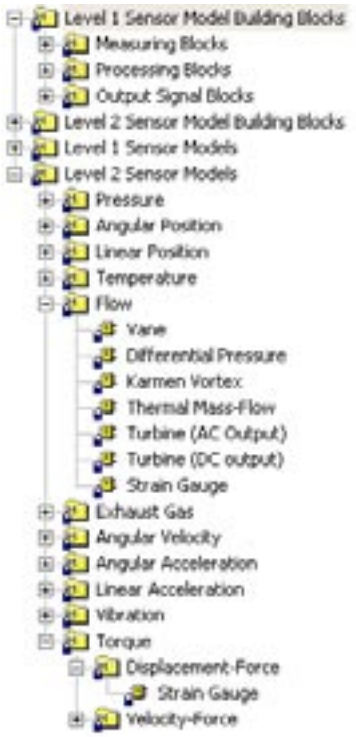
- Pressure
- Angular and linear position
- Temperature
- Flow
- Angular velocity
- Angular and linear acceleration
- Torque
- Vibration

Sensor Model Library Elements

The Sensor Model Library includes:

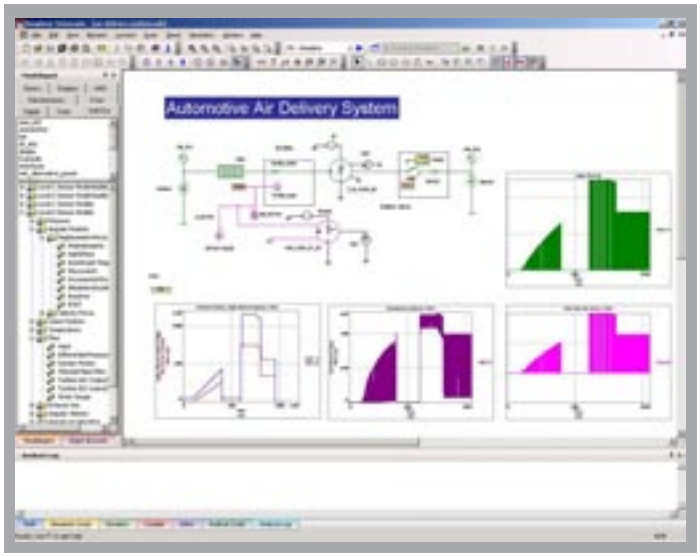
- 94 ideal sensor models
- 94 non-ideal sensor models
- 43 ideal building blocks
- 43 non-ideal building blocks

These models cover the most common automotive and aerospace sensing technologies, including piezoresistive, piezoelectric, Hall effect, LVDT, digital encoding, thermocouple, and thermistor.



Sensor Model Library Example

In this example, SIMPLORER Sensor Model Library components are used in a simulation model of an automotive air delivery system. A potentiometric angular position sensor provides a linear voltage output signal that is directly proportional to the amount of throttle input from the driver. The magnitude of the sensor's output signal determines the duty cycle of the PWM block, which is used to control the time that the valve remains open. The thermal mass-flow sensor provides a voltage output signal that corresponds to the amount of air flowing through the valve.



The Sensor Model Library offers the ability to quickly build and customize sensor models for all types of applications.

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