SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

DEPARTMENT OF AUTOMOBILE ENGINEERING

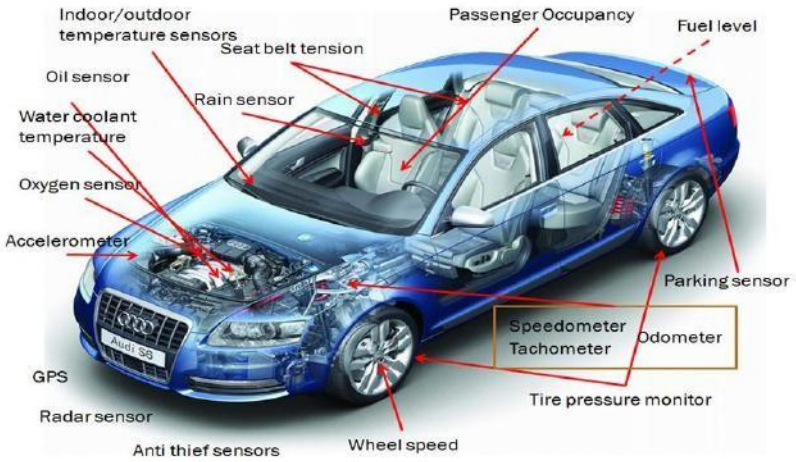
COURSE NAME : 19MCE402 – AUTOTRONICS

IV YEAR / VII SEMESTER

Unit 3 – Temperature Sensor

Sensors

Sensors are the components of the system that provide the inputs that enable the computer **(ECM)** to carry out the operations that make the system function correctly.

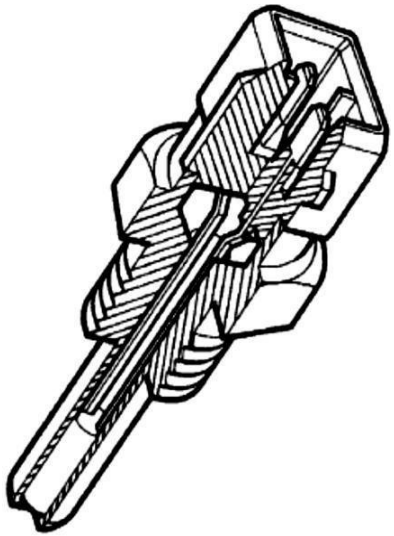


Types of Sensors

1. Mass air flow (MAF) rate
2. Exhaust gas oxygen concentration (possibly heated)
3. Throttle plate angular position
4. Crankshaft angular position/RPM
5. Coolant temperature
6. Intake air temperature
7. Manifold absolute pressure (MAP)
8. Differential exhaust gas pressure
9. Vehicle speed
10. Transmission gear selector position

Temperature sensor

- A commonly used device used for sensing temperature is the thermistor. A thermistor utilizes the concept of negative temperature coefficient.
- Most electrical conductors have a positive temperature coefficient. This means that the hotter the conductor gets the higher is its electrical resistance.
- This thermistor operates differently; its resistance gets lower as its temperature increases and this is a characteristic of semiconductor materials.



- There is a well-defined relationship between temperature and resistance.
- This means that current flow through the thermistor can be used to give an accurate representation of temperature.
- Figure shows the approximate relationship between temperature and resistance.
- The coolant temperature sensor provides the ECU with information about engine temperature and thus allows the ECU to make alterations to fuelling for cold starts and warm-up enrichment.

Thank You !