

Acceleration Based Front /Side Impact Satellite

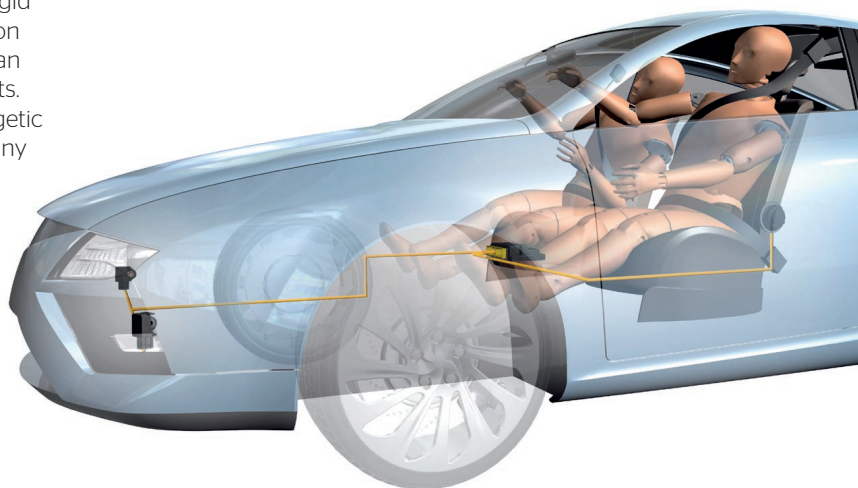


Proven millions of times over - gSAT acceleration satellite

Our acceleration satellites for frontal and side impacts as well as pedestrian protection have proven their value millions of times over and have become standard technology worldwide.

They supply information on the acceleration values in the rigid vehicle structures in the event of a crash. Used in conjunction with the pressure satellite pSAT, acceleration satellites offer an optimum solution for the rapid discrimination of side impacts.

When the two technologies interact with each other, a synergetic value is obtained: In a crash, the pSAT immediately senses any pressure change in the door, and the gSAT then measures the lateral acceleration. With this fast, precise information, the airbag control unit can activate the side air bags in just a few milliseconds.

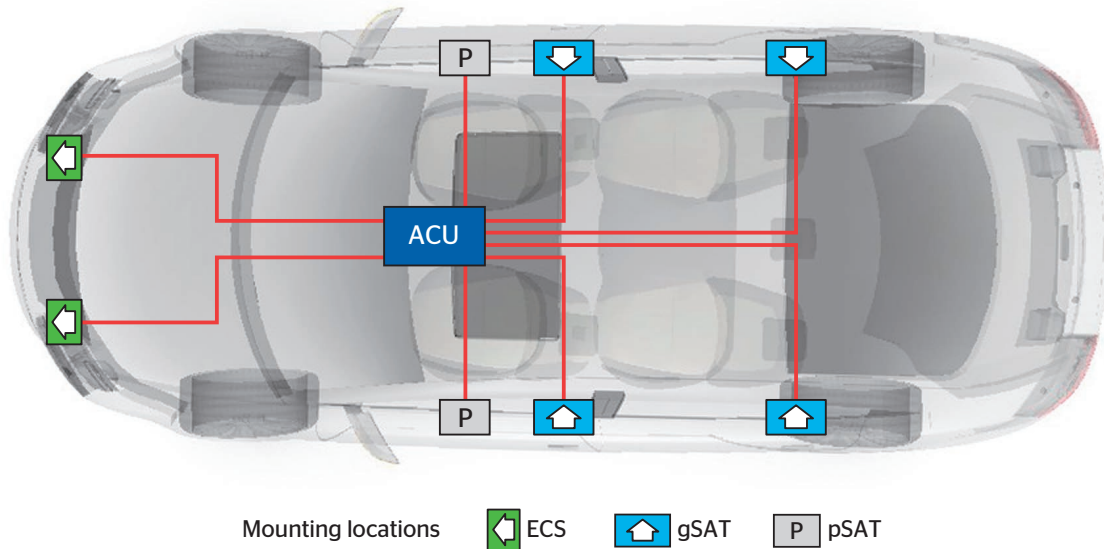


Sensing Principle

- › A crash situation causes acceleration of the vehicle
- › Direct measurement of this acceleration by a micro mechanical acceleration sensor (gSAT)
- › Sensing principle applicable for front crashes (Early Crash Sensor ECS), side crashes (Side Impact Sensor) and Pedestrian Protection Sensing
- › Multiple sensing concept in combination with pressure satellites (e.g. clipSAT)

Technical Features

- › Fully integrated solution:
 - › Signal conditioning
 - › Sensor self diagnosis
 - › Protocol handling
 - › Synchronous data transfer with 10 Bit (PSI5)
 - › Various acceleration ranges: $\pm 120g$; $\pm 240g$; $\pm 480g$
 - › Sensing axes: x, y, z and dual-axis
 - › Temperature range: -40 to $+85^{\circ}\text{C}$ (side)
 -40 to $+125^{\circ}\text{C}$ (front)



Key Benefits

- › Cost efficient housing concept with one bushing
- › High integration flexibility through various sensing axes
- › "Intelligent sensor" through full integration
- › Multi sensing concept:
 - › improvement of side sensing through combined use of pressure and acceleration sensing principles
- › Extensive worldwide field experience
- › Excellent production quality (close to 0 ppm)