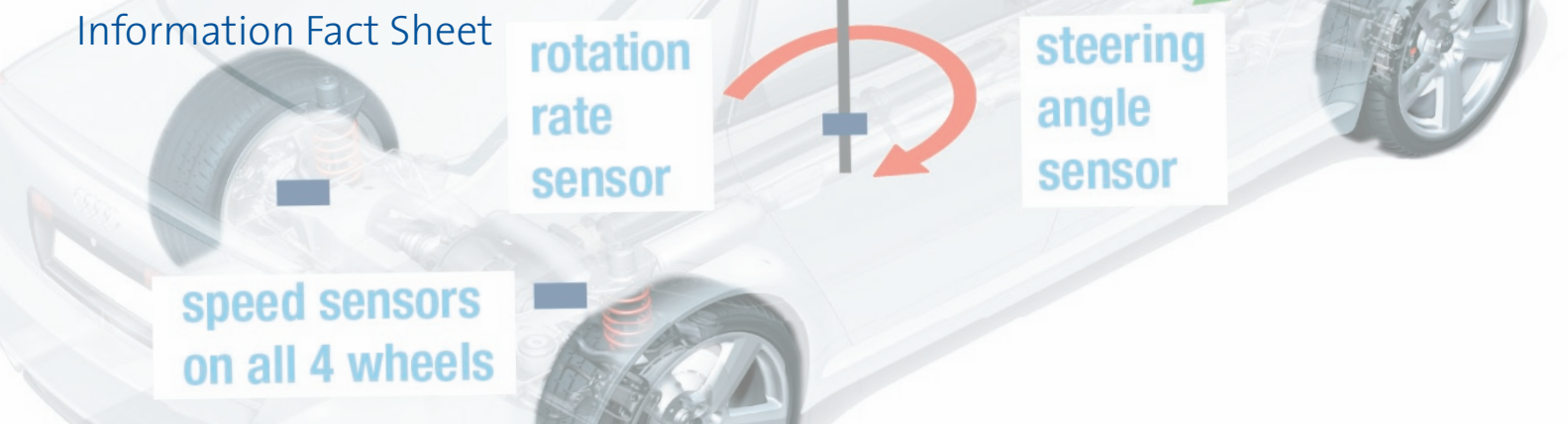


# ELECTRONIC STABILITY CONTROL

## Information Fact Sheet



## INTRODUCTION

Electronic Stability Control (ESC) is an advanced vehicle safety technology aimed at preventing crashes. Several studies have found that ESC is very effective at reducing crash and fatality rates by helping drivers maintain control of their vehicles.

## OTHER NAMES FOR ESC

ESC has a wide variety of marketing names used by different vehicle manufacturers for what is essentially the same function, which is potentially confusing for consumers. ESC names include:

- Electronic stability program (ESP)
- Vehicle stability control (VSC)
- Dynamic stability control (DSC)
- Vehicle stability assist (VSA)

## FINDINGS OF INTERNATIONAL RESEARCH INTO ESC

### IIHS study

The US based Insurance Institute of Highway Safety (IIHS) studied the effectiveness of stability control as a road safety measure. The study, released in October 2004, found that the fitment of ESC was effective in reducing single vehicle crashes including those involving fatalities. This isn't surprising because such crashes typically are characterised by drivers losing control of their vehicles, often on curves.

### Specific findings of the Institute study included

- 1 ESC reduced fatal single-vehicle crash risk by about 56 percent;
- 2 The fatality risk reduction for crashes involving two or more vehicles wasn't statistically significant; and
- 3 ESC reduced the risk of all single-vehicle crashes (fatal and nonfatal) by 41 percent.

The study showed that, based on all police-reported crashes in seven states over two years, ESC was effective in reducing fatal crashes by 34 percent.

### Swedish study

A Swedish National Road Administration study in 2003 reported ESC effectiveness levels in different conditions on Swedish roads. It found that the effectiveness of ESC in reducing crashes was around 22 percent. In wet and snow conditions the reductions attributed to ESC were even higher.

### DaimlerChrysler

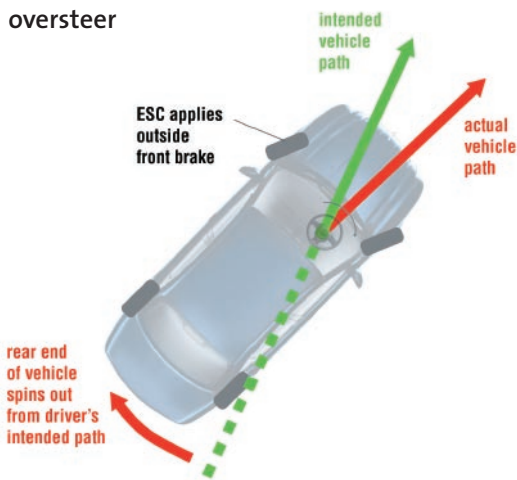
DaimlerChrysler claims that "The average share of newly registered Mercedes models involved in such (single vehicle) accidents in 1998/1999 was 20.7 percent. ESP® (ESC) helped to reduce this figure by more than 42 percent in 2002/2003. At the same time, the share of passenger car models from other brands involved in these types of traffic accident fell by only about 13 percent."

The IIHS study found that ESC benefits are most prevalent in single vehicle crashes. Examples of single vehicle crashes include roll-overs and impacts with rigid objects such as trees. In Australia, single vehicle crashes accounted for 399 fatalities in 2003 (44 percent of total fatalities), more than the number of fatalities from multiple vehicle crashes.

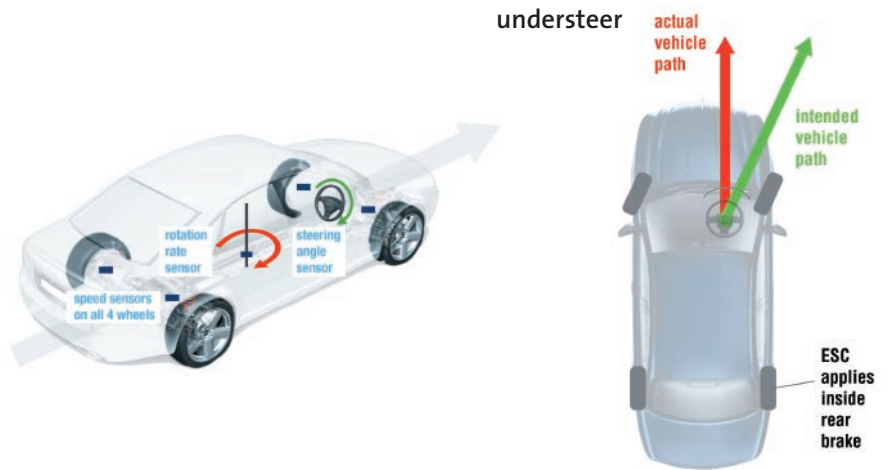
## HOW ESC WORKS

ESC is an extension of antilock brake technology, which has speed sensors and independent braking for each wheel. For ESC, additional sensors continuously monitor how well a vehicle is responding to a driver's steering input. These sensors detect when a vehicle is about to stray from the driver's intended line of travel (that is, lose control), which usually occurs in high-speed manoeuvres or on slippery roads. Then ESC brakes individual wheels automatically to keep the vehicle under control.

### oversteer



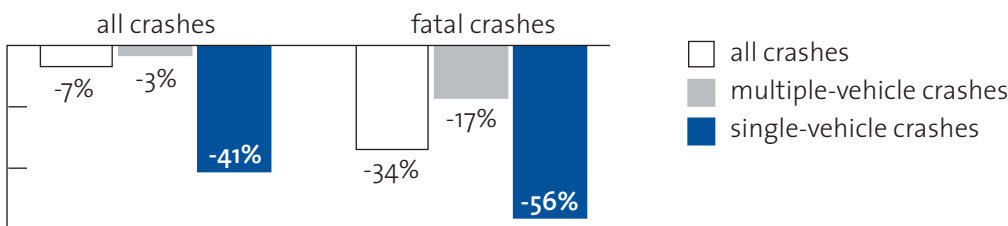
### understeer



For most drivers ESC isn't likely to activate frequently. For example, it won't prevent most of the fender-bender crashes that occur so often in stop-and-go traffic. ESC is designed to help a driver in the relatively rare event of loss of control at high speed or on a slippery road. When a driver enters a curve too fast, for example, the vehicle may spin out of control. With ESC, automatic braking is applied to help keep the vehicle under control.

## EFFECTS OF ESC ON CRASH RISK IN THE USA

Percent change in crash rates per registered vehicle year for cars and SUVs with standard ESC vs. optional or no ESC



## WHAT IS THE DIFFERENCE BETWEEN ESC, ABS AND TRACTION CONTROL?

Where ABS and traction control are effective in assisting with braking and acceleration, the addition of the extra sensors enables ESC to offer the driver assistance in turning under hazardous conditions. As road safety measures go, ABS has not proven to be as effective a measure in preventing crashes. Many reports on the real world performance of ABS brakes have found that vehicles equipped with ABS had a higher risk of involvement in single vehicle crashes, probably because of driver over-confidence. Vehicles equipped with ESC also feature traction control and ABS brakes.

### Vehicle equipment

Traction control

ABS – Anti-lock Braking System

EBD – Electronic Brake force Distribution

ESC – Electronic Stability Control

### Situation

This systems prevents wheel spin under acceleration, which helps to maintain vehicle stability when accelerating

ABS prevents wheels locking during heavy braking. This helps a driver steer while braking heavily and achieves shorter braking distances on slippery surfaces

Helps to balance braking forces between front and rear. In turn this helps to minimise braking distance and keep stability under light axle loads.

Builds on all the functions above but adds the ability to control loss of traction during cornering as well.

## NRMA'S POSITION

- NRMA encourages vehicle manufacturers to fit ESC as a standard feature.
- NRMA encourages private and fleet car buyers to specify a vehicle equipped with ESC.
- NRMA calls on vehicle manufacturers to adopt a common name to refer to the technology to avoid consumer confusion with the product.

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