



Bosch call it the electronic guardian angel

They describe critical manoeuvres with and without ESP.

Vehicle without ESP:

1. Vehicle approaches an obstacle.
2. Vehicle goes of course, enters oncoming traffic lane and driver loses control.
3. Counter steering causes the vehicle to go into a skid.

Vehicle with ESP:

1. Vehicle approaches an obstacle.
2. Vehicle threatens to break away. ESP intervenes and restores full steerability.
3. Counter steer results in threat of renewed breakaway. ESP intervenes again
4. Vehicle is stabilized.

Bosch says the Electronic Stability Program (ESP) supports the driver in nearly all critical driving situations. It detects skidding instantaneously and actively counteracts it. ESP goes beyond ABS and traction control systems (TCM). Sensors read desired steering direction, the vehicles rotary movement and lateral accelerations.

From this data the control unit calculates the actual movement of the vehicle, comparing it 25 times per second with the driver's desired direction. If the values do not correspond, ESP reacts instantly without any action on the part of the driver. It reduces engine power and brakes individual wheels. Skidding is counteracted and the car remains safe on its desired course.

The system was developed in conjunction with Mercedes-Benz who was the first to launch it in 1995 in their S-class. Bosch has since refined the system.

Don't be confused with manufacturers trying to differentiate themselves with different names for what is the same system. They may call it DSC, PSM, VSA or VSC but it's ESP.

Components of ESP from Bosch are:

- ESP-Hydraulic unit with integrated ECU.
- Wheel speed sensor.
- Steering angle sensor.
- Yaw rate sensor with integrated acceleration sensor.
- Engine management ECU for communication.

Only 1% of those surveyed identified ESP and are aware of ESP as an active - corrective - safety system.

The life saving potential of ESP has been confirmed by several scientific studies:

- Toyota has concluded ESP could reduce driving accidents by 50%.
- Daimler-Chrysler reported a 42% reduction in accidents since introducing ESP as standard on Mercedes-Benz in 1999.
- VW think it could reduce fatal accidents by 35%.
- German studies show 25% of all injuries are due to skidding.
- 60% of fatal accidents are due to side impacts caused by skidding.
- American studies revealed a staggering 67% reduction in single SUV accidents when fitted with ESP.

With a skid control, skid prevention training course and practice in a safe environment, you can gain an instinctive understanding of how this technology works to keep you out of trouble, and this training and new knowledge could save your life.