

## Central triggering unit ZAE2

### Function

The airbag control unit "2nd Generation Central Triggering Unit (ZAE2)" replaces the ZAE/BAE control unit previously used and is also retrofittable.

After "Ignition ON" the system carries out a self-test for approx. 4 s. The failure warning lamp (AWL) lights during this test time.

If the control unit detects a fault which is currently pending or has already been stored in the fault code memory, the AWL will continue to light after the 4 s test phase, otherwise it will go out. The system assumes standby mode as soon as the self-test is completed.

The ZAE2 control unit accommodates sensors which pick up and evaluate the deceleration values of the vehicle which occur in the event of an accident.

The electronic control of the seat occupancy detection facility supplies the system with information as to whether the front passenger seat is occupied.

At the same time it monitors the belt buckles (on US vehicles) and in this way receives information as to whether the seat belts are buckled or not.

The control unit processes all this information and, on the basis of certain criteria, decides if and when the driver/passenger airbag as well as the belt tensioners are to be triggered, e.g. the front passenger airbag is not triggered if the passenger seat is not occupied.

The ZAE2 control unit can process a maximum of 3 accidents involving activation of at least one triggering circuit. An internal fault is then stored in the fault code memory which makes it necessary to replace the control unit.

### Caution!

**The airbag control unit may only be removed, installed or disconnected with the battery disconnected.**

### System components

#### ZAE2 control unit

The ZAE2 control unit features sensors which pick up and evaluate the deceleration which occurs during accidents.

There are 2 versions of the ZAE2 control unit:

- with 30-pin plug connector for the E31 and E36 model series as well as a retrofittable spare part for ZAE/BAE
- with 50-pin plug connector for model series E38 and E39 as from 3/96

Both control units have identical scope of functions.

#### Failure warning lamp AWL

The failure warning lamp lights during the self-test which takes place after switching on the ignition and when a fault is present in the system or an appropriate fault code is stored in the fault code memory.

If the ZAE2 control unit is disconnected from the vehicle wiring harness, the AWL lights due to a short-circuit jumper in the plug connector of the vehicle wiring harness

#### Seat occupancy detection (SBE)

A seat mat located under the cushion area of the front passenger seat supplies resistance values, dependent on the load status, to the control unit of the electronic seat occupancy detection facility. Here the resistance values are evaluated and the result "occupied/not occupied" is sent via a data link to the ZAE2 control unit.

The "occupied" status is detected when a load of more than approx. 12 kg is applied on the front passenger's seat.

**Important!**

For safety reasons, the "occupied" status is still detected for approx. 2 minutes after the load has been removed.

**Triggering circuits**

- Driver airbag
- Passenger airbag
- Belt tensioner driver's side
- Belt tensioner passenger's side

The triggering circuits are codeable. They are activated in compliance with the criteria described above.