## ■AIRBAG FOR FRONTAL COLLISION

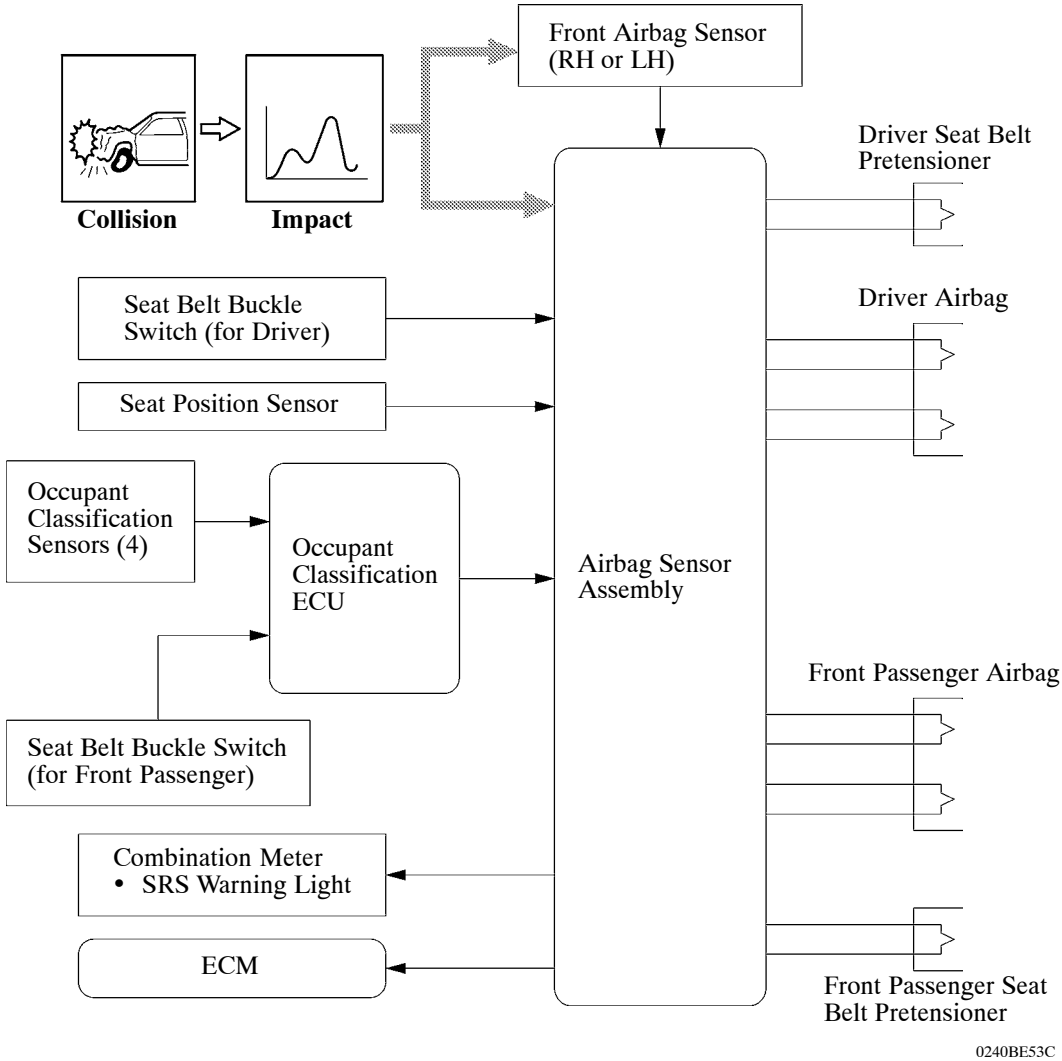
### 1. General

There are two airbags for frontal collisions: driver and front passenger. These airbags deploy simultaneously. The SRS driver and front passenger airbags use a dual-stage control.

- Airbag Sensor Assembly detects the information indicated below from various sources in order to control the dual stage activation.

| Airbag | Information | Source |
|---|---|---|
| Driver | Extent of Impact | • Front Airbag Sensor (RH or LH)<br>• Airbag Sensor Assembly |
| | Driver Seat Position | Seat Position Sensor |
| | Seat Belt Condition | Seat Belt Buckle Switch (Non-contact Type) |
| Front Passenger | Extent of Impact | • Front Airbag Sensor (RH or LH)<br>• Airbag Sensor Assembly |
| | Occupant Classification | Four Occupant Classification Sensors (Through the Occupant Classification ECU) |
| | Seat Belt Condition | Seat Belt Buckle Switch (Non-contact Type) (Through the Occupant Classification ECU)) |

**▶ System Diagram ◀**




BE

## 2. SRS Driver and Front Passenger Airbags

The SRS driver and front passenger airbags each contain a set of two initiators and propellants. The Airbag Sensor Assembly helps optimize the airbag inflation output by controlling the inflation timing of these initiators.

## 3. Front Airbag Sensor

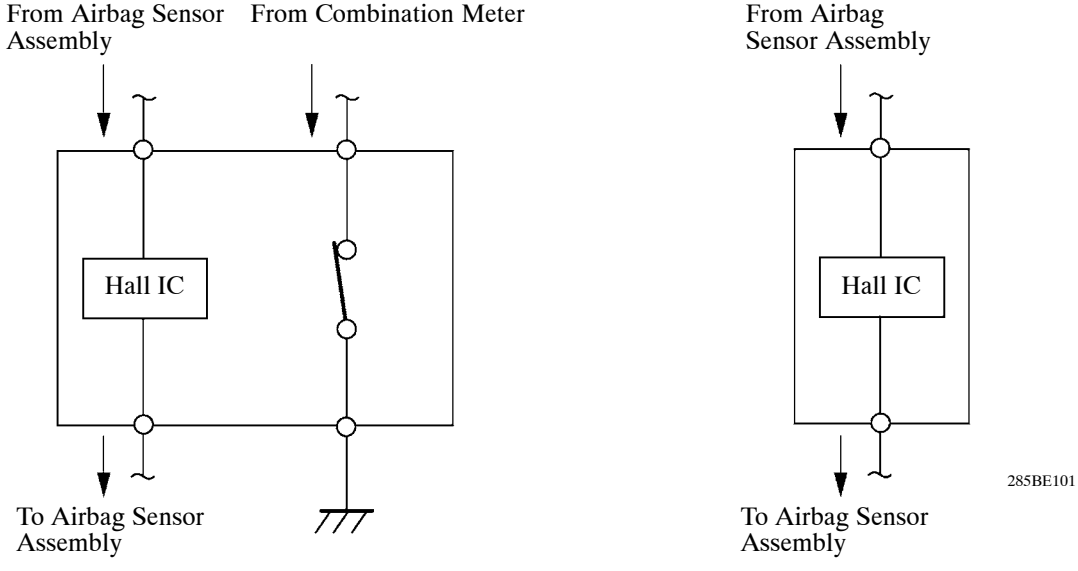
Front airbag sensor contains an electrical type deceleration sensor. Based on the deceleration of the vehicle during a front collision, a distortion is created in the sensor and converted into an electrical signal. Accordingly, the extent of the collision can be detected in detail.

## 4. Seat Belt Buckle Switch

The seat belt buckle switch detects if the seat belt is fastened.

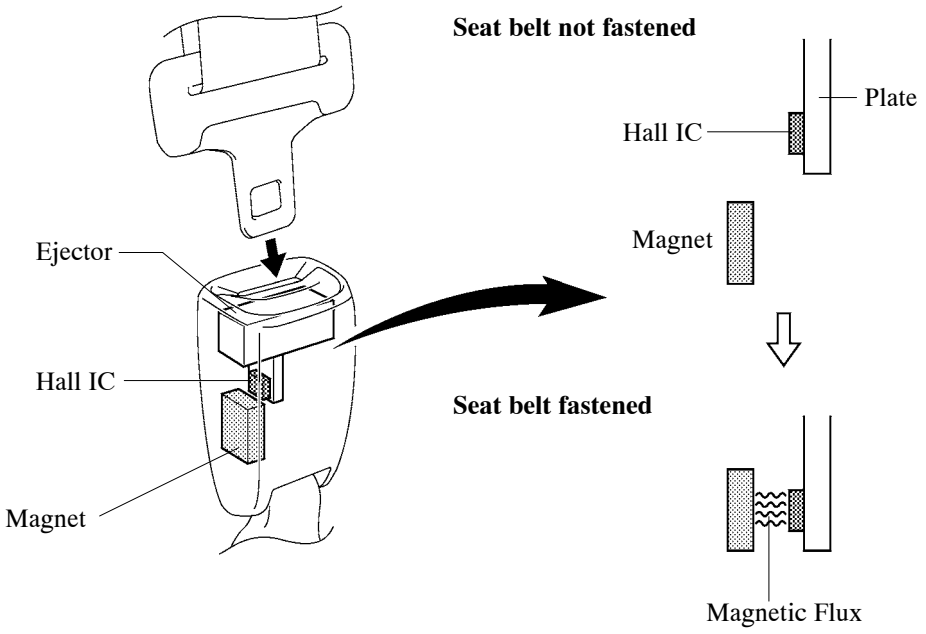
- A contact type and non-contact type switch is built in to the seat belt buckle on the driver side. The contact type switch is for the seat belt reminder system and the non-contact type switch is for the SRS airbag system.
- A non-contact type switch is built in to the seat belt buckle on the front passenger side.
- The non-contact type switch contains a Hall IC and two magnets, installed into the front seat inner belt assembly.

**▶ Electrical Circuit ◀**



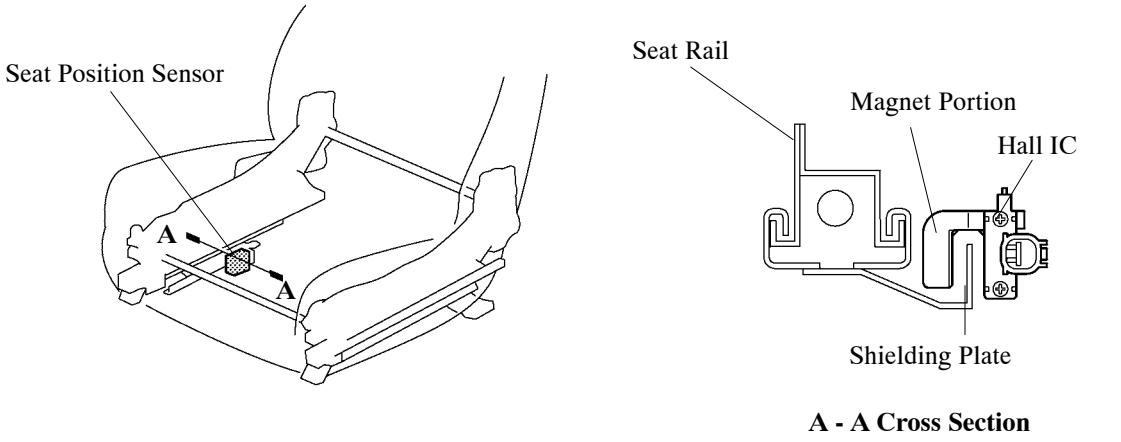

**Driver** **Front Passenger**

- The ejector inside the front seat inner belt assembly and the plate installed to the ejector move when the seat belt is removed or applied. The movement of the plate creates the magnetic flux density of the magnet.
- The Hall IC detects the changes in the magnetic flux density as seat belt removal or application, and outputs the signal to Airbag Sensor Assembly.



## 5. Seat Position Sensor

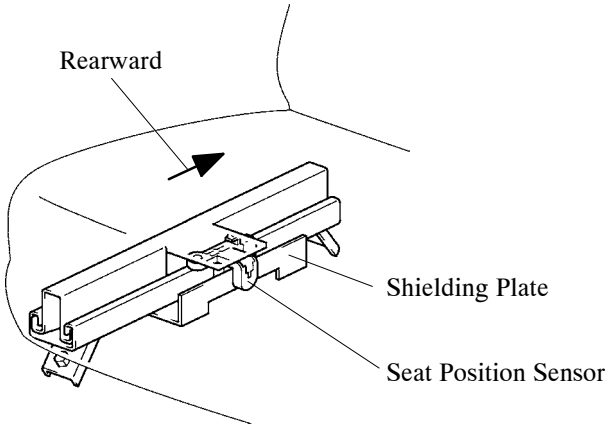
- The seat position sensor, which is attached to the seat rail of the driver seat, detects the sliding position of the seat. In addition, the shielding plate to make the seat position sensor judge the seat position is installed on this seat rail.
- The seat position sensor use a Hall IC for its sensor and has magnet portion on its opposite side.




232BE47

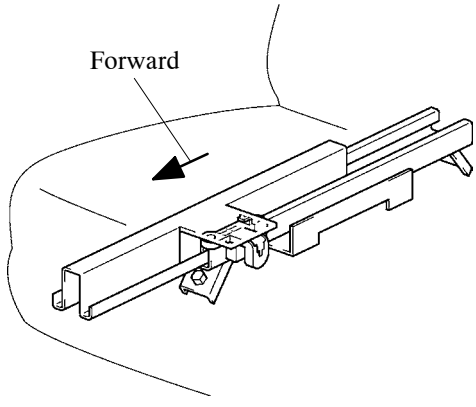
- The seat position detection by the seat position sensor judges that the seat position is rearward if the shielding plate is between the sensor and the seat position is forward if the shielding plate is not between the sensor.

**▶ Seat position is rearward ◀**




230LX91

**▶ Seat position is forward ◀**




230LX92