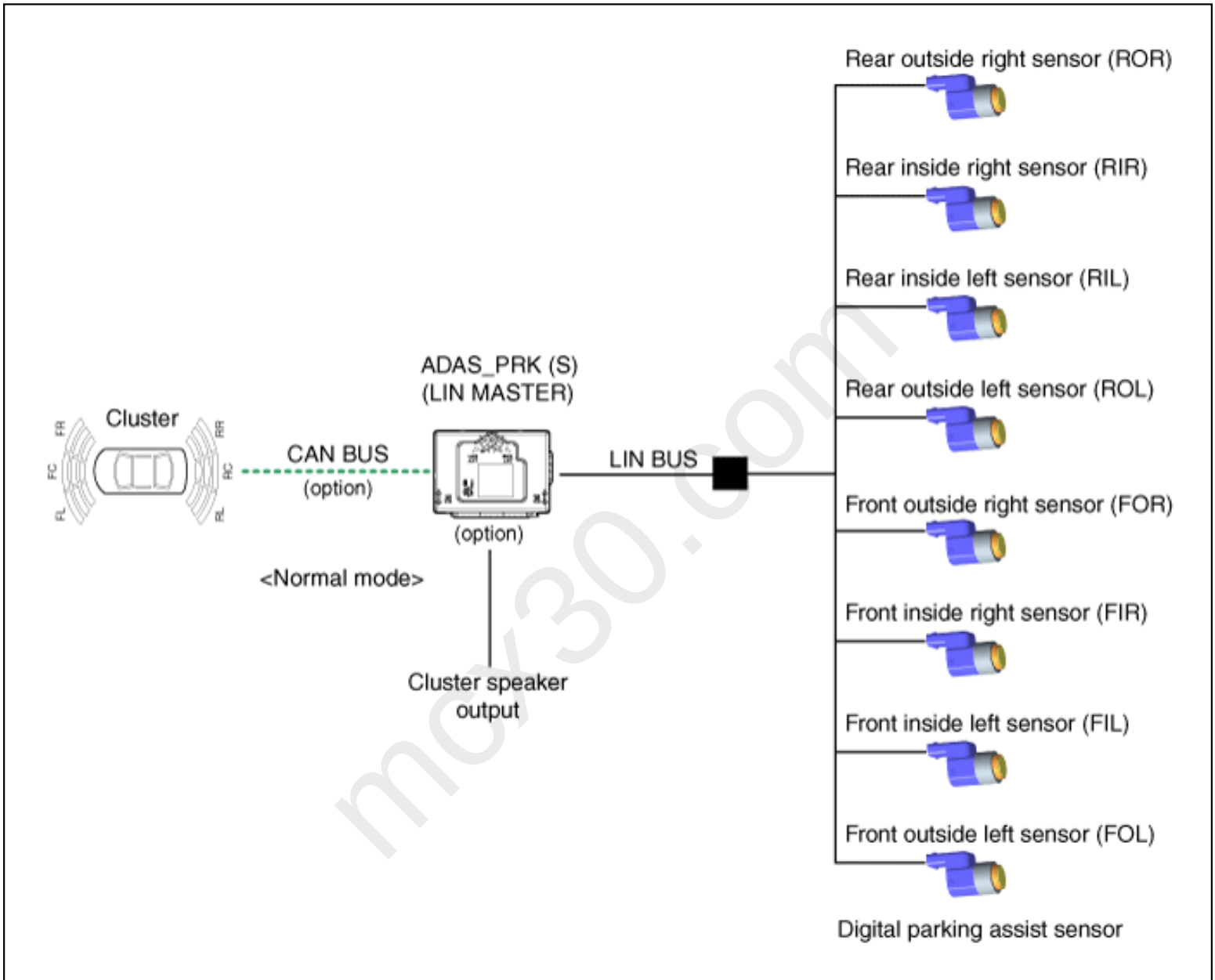


Description

- PDW consists of 8 sensors (front : 4 units, rear : 4 units) that are used to detect obstacles and transmit the result in three separate warning levels, the first, second and third to IBU via LIN communication.
- IBU decides the alarm level by the transmitted communication message from the slave sensors, then operates the buzzer or transmits the data for display.

Block Diagram



System Operation Specification

Initial mode

1. System initializing time
 - PDW-F : 500ms after IGN1+ initial D Gear + below 10 Km/h
 - PDW-R : 500ms after IGN1+ initial R Gear
2. PDW recognizes LID and sets the sensor ID up during initialization.
3. PDW activates each sensor and then executes the diagnosis after finishing initialization of IPM(IBU).
4. PDW starting buzzer is normally worked, when sensor does not send an error message and after finishing error diagnosis.

5. If any failure is received from the any sensors, PDW starting buzzer does not work but the failure alarm is operated for a moment.

If you have display option, warning sign is also shown on it.



Buzzer for sensor failure is operated once, but display is shown continuously until it is repaired completely.

6. IBU memorizes the completed initializing status of sensor.

Normal mode

7. PDW-F : Lin communication starts and keeps the routine after IGN1 ON+D gear + below 10 km/h.
PDW-R : Lin communication starts and keeps the routine after IGN1 ON+R gear
8. After initializing, the routine starts at once without PDW starting warning sound.
9. Alarms of obstacle consists of 3 level 1,2,3 step and 1,2 alarm sounds intermittently and 3 alarm sounds continuously. 1 level alarm doesn't exist in the front ultrasonic sensor.
10. In display, the data of each sensor is sent from IBU to display, for example cluster. CAN communication is used for transmission and maximum gateway time is 50ms.
11. The efficient vehicle speed of PDW operation is under 10Km/h.
12. Operation doesn't start or stops at gear N, P.

Sensing Area

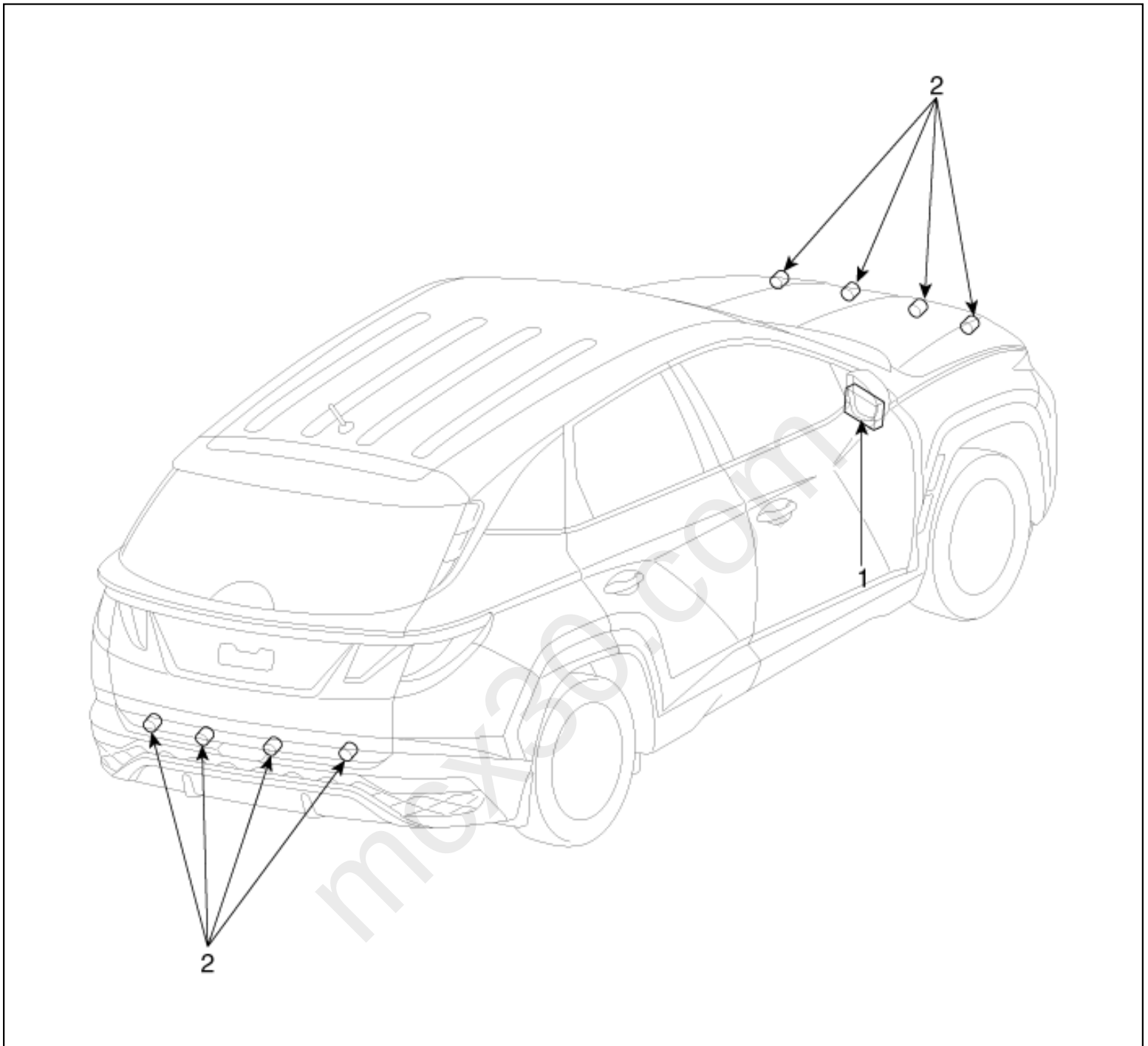
Level	Distance range	Allowed range
1	Front : 61 - 100 cm (24.02 - 39.37 in.) / Rear : 61 - 120 cm (24.02 - 47.2 in.)	± 15 cm (5.90 in.)
2	31 - 60 cm (12.20 - 23.62 in.)	± 15 cm (5.90 in.)
3	0 - 30 cm (0 - 11.81 in.)	± 10 cm (3.94 in.)

*Measurement condition : PVC pipe - Diameter 75 mm (0.0394 in.), length 1 m (39.37 in.), at normal temperature

Display Alarm Indicator Specification

Warning level	Indicator display		
	PDW-R/F Gear 'D'	PDW-R/F Gear 'R'	PDW-R Gear 'R'
Warning level 0			
Warning level 1			
Warning level 2			
Warning level 3			

Component
Location



1. ADAS_PRK (S)

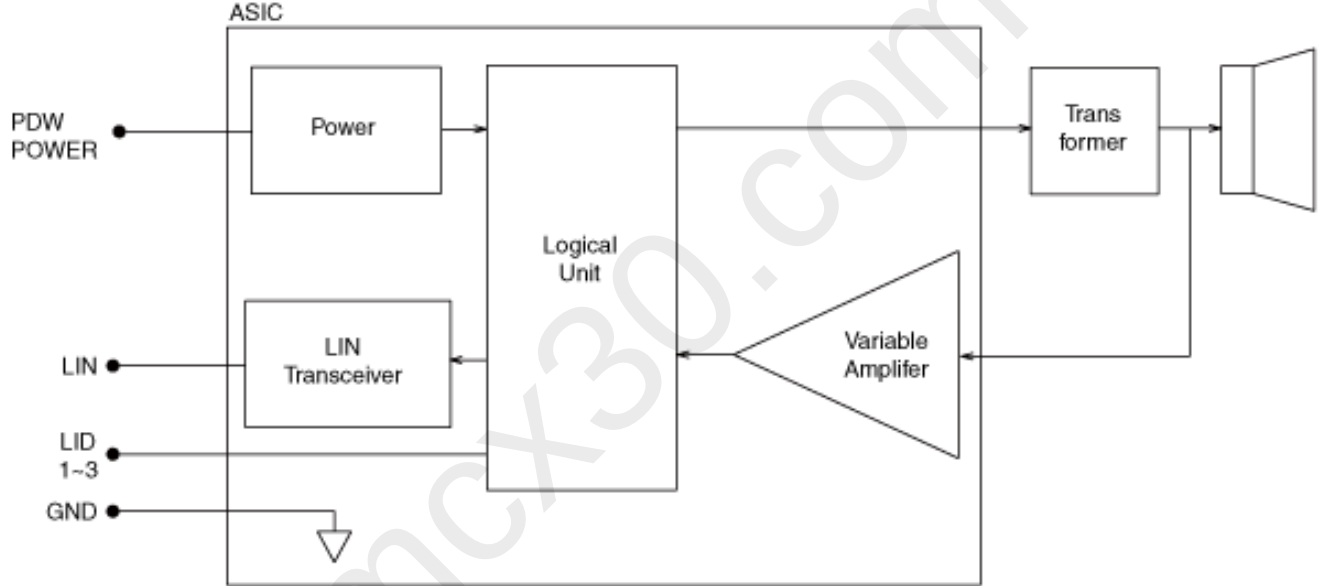
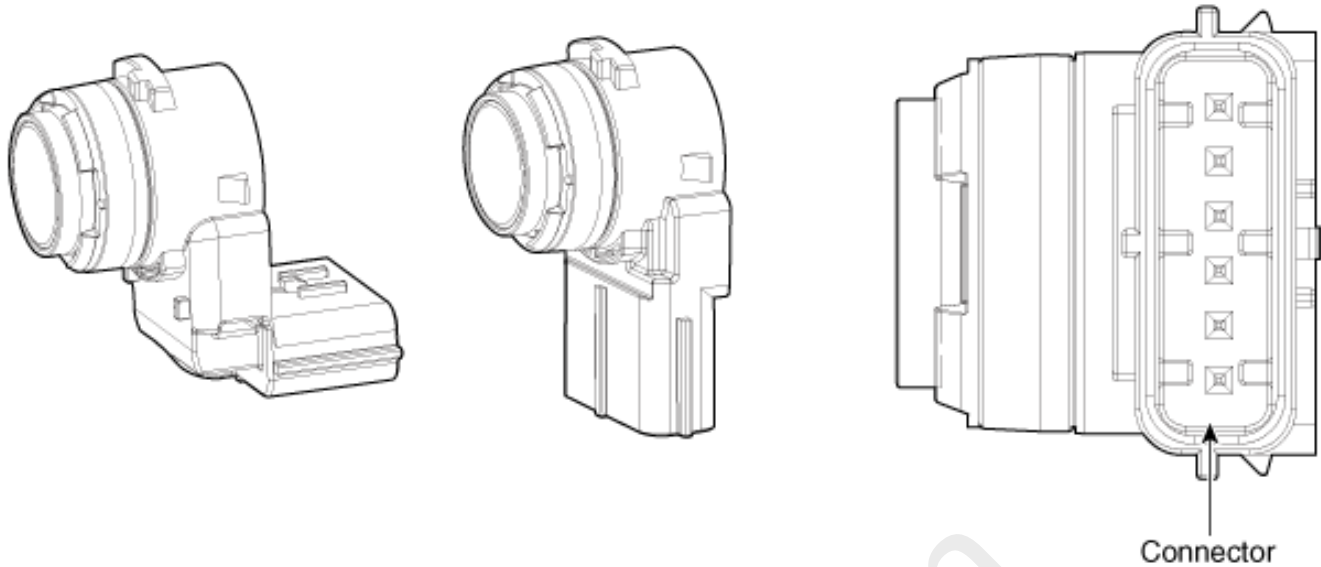
2. Ultrasonic Sensor

※ PDW function is applied alone, it is integrated into ADAS_PRK (S)

Specifications

[ADAS_PRK Application Specification (Valeo)]

Item		Specification
Ultrasonic sensor	Voltage rating	DC 12V
	Detecting range	40cm ~ 120cm
	Operating voltage	DC 9V ~ 16V
	Operation current	MAX. 40mA
	Storage temperature	-30°C ~ +80°C
	Operation temperature	-40°C ~ +85°C
	Operation frequency	51.2 KHz
	Number of sensors	8 Units



Connector	Pin NO	Description	Pin NO	Description
	1	DefineIDLID1_IN	4	Ground
	2	DefineIDLID2_IN	5	LIN PDW
	3	DefineIDLID3_IN	6	PDW Power

Removal

1. Disconnect the negative (-) battery terminal.
2. Remove the front/rear bumper assembly.
(Refer to Body - "Front Bumper Assembly")
(Refer to Body - "Rear Bumper Cover")
3. Disconnect the connector from the parking distance warning sensor.
4. Pull out the sensor (A) by opening the sensor holder out.



Installation

1. Install the Parking distance warning sensor after connecting the connector.
2. Install the front/rear bumper cover.
3. Connect the negative (-) battery terminal.