

# RESTRAINTS

**08**  
SECTION

**OUTLINE . . . . . 08-00**  
**ON-BOARD DIAGNOSTIC . . . . 08-02**

**AIR BAG SYSTEM . . . . . 08-10**

## 08-00 OUTLINE

**RESTRAINTS ABBREVIATIONS . . . . . 08-00-1**

**RESTRAINTS FEATURES . . . . . 08-00-1**

### RESTRAINTS ABBREVIATIONS

EHU08000000101

ALR	Automatic Locking Retractor
DLC	Data Link Connector
DTC	Diagnostic Trouble Code
ELR	Emergency Locking Retractor
GND	Ground
IG	Ignition
LED	Light Emitting Diode
LH	Left Hand
PAD	Passenger Air Bag Deactivation
PID	Parameter Identification
RH	Right Hand
SAS	Sophisticated Air bag Sensor
SST	Special Service Tool
WDS	Worldwide Diagnostic System

08-00

### RESTRAINTS FEATURES

EHU08000000102

Improved safety	• A front passenger sensing system has been added.
-----------------	--



# 08-02 ON-BOARD DIAGNOSTIC

ON-BOARD DIAGNOSTIC  
FUNCTION OUTLINE ..... 08-02-1

ON-BOARD DIAGNOSTIC  
FUNCTION FUNCTION .....08-02-1  
Self-diagnostic Function .....08-02-1  
PID/Data Monitoring Function.....08-02-2

## ON-BOARD DIAGNOSTIC FUNCTION OUTLINE

EHU080200000101





- The on-board diagnostic function consists of the following functions: a failure detection function, which detects malfunctions in the air bag system-related parts; a memory function, which stores detected DTCs; a self-diagnostic function, which indicates system malfunctions using DTCs; a PID/data monitoring function, which reads out specific input/output signals.
- Using the WDS or equivalent, DTCs can be read out and deleted, and the PID/data monitoring function can be activated.
- A fail-safe function, prevents the abrupt activation of the air bag module and the pre-tensioner seat belt in case of an air bag system malfunction.

## ON-BOARD DIAGNOSTIC FUNCTION FUNCTION

EHU080200000102

### Self-diagnostic Function

- Diagnostic DTCs B1013, B1884, B1890 and B2290 have been added due to the adoption of the seat weight sensor.

WDS display	DTC		System malfunction location	
	Air bag system warning light			
	Flashing pattern	Priority ranking		
B1013	16		18	Seat weight sensor calibration error
B1884	18		21	Passenger air bag deactivation (PAD) indicator open or short to body ground
B1890	18		21	Passenger air bag deactivation (PAD) indicator circuit short to power supply
B2290	16		18	Passenger sensing system malfunction

08-02

## ON-BOARD DIAGNOSTIC

### PID/Data Monitoring Function

- By using the PID/data monitoring function, the monitored item of the input/output signal, as set on the SAS control module, can be freely selected and read out in real-time.
- The WDS or equivalent is used to read out PID/data monitor information.

PID name (definition)	Unit/Condition	Operation Condition (Reference)	Terminal
CCNT_RCM (Number of continuous DTCs)	—	<ul style="list-style-type: none"> <li>• DTCs detected: 1—255</li> <li>• No DTCs detected: 0</li> </ul>	—
CRSH_ST_D1 (Driver-side side air bag sensor communication state)	OK/ FAULT	<ul style="list-style-type: none"> <li>• Sensor normal: OK</li> <li>• Sensor communication error: FAULT</li> </ul>	2Z, 2AA
CRSH_ST_D2 (Driver-side side air bag sensor circuit state)	OK/ FAULT	<ul style="list-style-type: none"> <li>• Sensor normal: OK</li> <li>• Sensor internal circuit error: FAULT</li> </ul>	2Z, 2AA
CRSH_ST_F1 (Crash zone sensor communication state)	OK/ FAULT	<ul style="list-style-type: none"> <li>• Sensor normal: OK</li> <li>• Sensor communication error: FAULT</li> </ul>	1B, 1C
CRSH_ST_F2 (Crash zone sensor circuit state)	OK/ FAULT	<ul style="list-style-type: none"> <li>• Sensor normal: OK</li> <li>• Sensor internal circuit error: FAULT</li> </ul>	1B, 1C
CRSH_ST_P1 (Passenger-side side air bag sensor communication state)	OK/ FAULT	<ul style="list-style-type: none"> <li>• Sensor normal: OK</li> <li>• Sensor communication error: FAULT</li> </ul>	2B, 2C
CRSH_ST_P2 (Passenger-side side air bag sensor circuit state)	OK/ FAULT	<ul style="list-style-type: none"> <li>• Sensor normal: OK</li> <li>• Sensor internal circuit error: FAULT</li> </ul>	2B, 2C
D_ABAGR2 (Driver-side air bag module (inflator No.2) resistance)	Ohm	Under any condition: 1.5—3.7 ohms	1G, 1J
DABAGR (Driver-side air bag module (inflator No.1) resistance)	Ohm	Under any condition: 1.5—3.7 ohms	1S, 1V
D_PTENSFLT (Driver-side pre-tensioner seat belt circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Pre-tensioner seat belt circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2P, 2S
DR_BUKL (Driver-side buckle switch status)	Buckled/ Unbuckled	<ul style="list-style-type: none"> <li>• Driver-side buckle switch on: Buckled</li> <li>• Driver-side buckle switch off: Unbuckled</li> </ul>	2T
DR_CURTN (Driver-side curtain air bag module resistance)	Ohm	Under any condition: 1.4—3.2 ohms	2V, 2Y
DR_PTENS (Driver-side pre-tensioner seat belt resistance)	Ohm	Under any condition: 1.5—3.1 ohms	2P, 2S
DS_AB (Driver-side side air bag module resistance)	Ohm	Under any condition: 1.4—3.2 ohms	2M, 2O
DS_AB_ST (Driver-side side air bag module circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2M, 2O
DS_CURT_ST (Driver-side curtain air bag module circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2V, 2Y
DS1_STAT (Driver-side air bag module (inflator No.1) circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	1S, 1V

## ON-BOARD DIAGNOSTIC

PID name (definition)	Unit/Condition	Operation Condition (Reference)	Terminal
DS2_STAT (Driver-side air bag module (inflator No.2) circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>Related wiring harness short to power supply: SHRT_B+</li> <li>Related wiring harness short to ground: SHRT_GND</li> <li>Related wiring harness circuit open: OPEN</li> <li>Air bag module circuit resistance low: SQ_LOWRES</li> <li>Related wiring harness normal: Normal</li> </ul>	1G, 1J
DSB_P_ST (Driver-side pre-tensioner seat belt circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>Related wiring harness short to power supply: SHRT_B+</li> <li>Related wiring harness short to ground: SHRT_GND</li> <li>Related wiring harness circuit open: OPEN</li> <li>Pre-tensioner seat belt circuit resistance low: SQ_LOWRES</li> <li>Related wiring harness normal: Normal</li> </ul>	2P, 2S
DTC_CLR_ST*1 (Seat weight sensor DTC cleared status)	Started/ Normal End/ In Process/ OCS Fault	Fault information cleared at seat weight sensor	11
IGN_V_2 (IG1 voltage)	V	Ignition switch to ON position: B+	1W
OCS_CAL_ST*2 (Seat weight sensor calibration status)	Starting/ Normal End/ Commanding/ NG (Voltage)/ NG (Weight)/ In Process Timeout/ OCS Fault	<ul style="list-style-type: none"> <li>Seat weight sensor calibration start-up: Starting</li> <li>Seat weight sensor calibration completed normally: Normal End</li> <li>Seat weight sensor calibration command being sent: Commanding</li> <li>Voltage malfunction during seat weight sensor calibration: NG (Voltage)</li> <li>Weight error during seat weight sensor calibration: NG (Weight)</li> <li>Seat weight sensor calibration time limit passed: Timeout</li> <li>Seat weight sensor calibration being processed: In Process</li> <li>Seat weight sensor or Seat weight sensor control module malfunction: OCS Fault</li> </ul>	11
OCS_SYS_ST*1 (Seat weight sensor status)	Empty/ SMALL/ LARGE/ Indeterminate/ Invalid	Occupant classification status determined by seat weight sensor	11
OCSFLT_CAL (Passenger sensing system calibration status)	OK/ FAULT	<ul style="list-style-type: none"> <li>Sensor normal: OK</li> <li>Seat weight sensor calibration error: FAULT</li> </ul>	11
OCSFLT_COM (Passenger sensing system communication status)	OK/ FAULT	<ul style="list-style-type: none"> <li>Sensor normal: OK</li> <li>Seat weight sensor control module communication error: FAULT</li> </ul>	11
OCSFLT_L (Passenger sensing system (LH) malfunction status)	OK/ FAULT	<ul style="list-style-type: none"> <li>Sensor normal: OK</li> <li>Seat weight sensor (LH) malfunction: FAULT</li> </ul>	11
OCSFLT_MDL (Passenger sensing system control module malfunction status)	OK/ FAULT	<ul style="list-style-type: none"> <li>Sensor normal: OK</li> <li>Seat weight sensor control module malfunction: FAULT</li> </ul>	11
OCSFLT_R (Passenger sensing system (RH) malfunction status)	OK/ FAULT	<ul style="list-style-type: none"> <li>Sensor normal: OK</li> <li>Seat weight sensor (RH) malfunction: FAULT</li> </ul>	11
OD_CRST_D1 (On demand driver-side side air bag sensor communication state)	OK/ FAULT	<ul style="list-style-type: none"> <li>Sensor normal: OK</li> <li>Sensor communication error: FAULT</li> </ul>	2Z, 2AA
OD_CRST_D2 (On demand driver-side side air bag sensor circuit state)	OK/ FAULT	<ul style="list-style-type: none"> <li>Sensor normal: OK</li> <li>Sensor internal circuit error: FAULT</li> </ul>	2Z, 2AA
OD_CRST_F1 (On demand crash zone sensor communication state)	OK/ FAULT	<ul style="list-style-type: none"> <li>Sensor normal: OK</li> <li>Sensor communication error: FAULT</li> </ul>	1B, 1C
OD_CRST_F2 (On demand crash zone sensor circuit state)	OK/ FAULT	<ul style="list-style-type: none"> <li>Sensor normal: OK</li> <li>Sensor internal circuit error: FAULT</li> </ul>	1B, 1C

08-02

## ON-BOARD DIAGNOSTIC

PID name (definition)	Unit/Condition	Operation Condition (Reference)	Terminal
OD_CRST_P1 (On demand passenger-side side air bag sensor communication state)	OK/ FAULT	<ul style="list-style-type: none"> <li>• Sensor normal: OK</li> <li>• Sensor communication error: FAULT</li> </ul>	2B, 2C
OD_CRST_P2 (On demand passenger-side side air bag sensor circuit state)	OK/ FAULT	<ul style="list-style-type: none"> <li>• Sensor normal: OK</li> <li>• Sensor internal circuit error: FAULT</li> </ul>	2B, 2C
OD_D_CURT (Driver-side curtain air bag module circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2V, 2Y
OD_DAB1_ST (Driver-side air bag module (inflator No.1) circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	1S, 1V
OD_DAB2_ST (Driver-side air bag module (inflator No.2) circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	1G, 1J
OD_DSAB_ST (Driver-side side air bag module circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2M, 2O
OD_P_CURT (Passenger-side curtain air bag module circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2A, 2D
OD_PAB1_ST (Passenger-side air bag module (inflator No.1) circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	1M, 1P
OD_PAB2_ST (Passenger-side air bag module (inflator No.2) circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	1A, 1D
OD_PSAB_ST (Passenger-side side air bag module circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2I, 2L
P_ABAGR2 (Passenger-side air bag module (inflator No.2) resistance)	Ohm	Under any condition: 1.4—2.9 ohms	1A, 1D
P_PTENSFLT (Passenger-side pre-tensioner seat belt circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Pre-tensioner seat belt circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: NORMAL</li> </ul>	2G, 2J
PABAGR (Passenger-side air bag module (inflator No.1) resistance)	Ohm	Under any condition: 1.4—2.9 ohms	1M, 1P
PS_AB (Passenger-side side air bag module resistance)	Ohm	Under any condition: 1.4—3.2 ohms	2I, 2L

## ON-BOARD DIAGNOSTIC

PID name (definition)	Unit/Condition	Operation Condition (Reference)	Terminal
PS_AB_ST (Passenger-side side air bag sensor circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2I, 2L
PS_BUKL (Passenger-side buckle switch status)	Buckled/ Unbuckled	<ul style="list-style-type: none"> <li>• Passenger-side buckle switch on: Buckled</li> <li>• Passenger-side buckle switch off: Unbuckled</li> </ul>	2H
PS_CURTN (Passenger-side curtain air bag module resistance)	Ohm	Under any condition: 1.4—3.2 ohms	2A, 2D
PS_CURT_ST (Passenger-side curtain air bag module circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2A, 2D
PS_PTENS (Passenger-side pre-tensioner seat belt resistance)	Ohm	Under any condition: 1.5—3.1 ohms	2G, 2J
PS_WEIGHT (Seat weight sensor measured weight of passenger)	kg	Display of load (body weight) on passenger-side seat	1I
PS1_STAT (Passenger-side air bag module (inflator No.1) circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	1M, 1P
PS2_STAT (Passenger-side air bag module (inflator No.2) circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Air bag module circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	1A, 1D
PSAB_DepSt (Passenger-side air bag module deployment status)	Active/ Inactive	<ul style="list-style-type: none"> <li>• Passenger-side air bag module operation (deployment) enabled status: Active</li> <li>• Passenger-side air bag module non-operation (non-deployment) status: Inactive</li> </ul>	1I
PSB_P_ST (Passenger-side pre-tensioner seat belt circuit status)	SHRT_B+/ SHRT_GND/ OPEN/ SQ_LOWRES/ Normal	<ul style="list-style-type: none"> <li>• Related wiring harness short to power supply: SHRT_B+</li> <li>• Related wiring harness short to ground: SHRT_GND</li> <li>• Related wiring harness circuit open: OPEN</li> <li>• Pre-tensioner seat belt circuit resistance low: SQ_LOWRES</li> <li>• Related wiring harness normal: Normal</li> </ul>	2G, 2J
TRAK_SW (Seat track position sensor state)	Forward/ Rearward	<ul style="list-style-type: none"> <li>• Front seat front position: Forward</li> <li>• Front seat rear position: Rearward</li> </ul>	2W, 2X

08-02

\*1 : Used during seat weight sensor calibration setting. Not necessary for diagnostic.

\*2 : When the calibration error is displayed, the error can be cleared by turning the ignition switch to the LOCK position.