## DTC INSPECTION

id080200080500

### CMDTC Self Test

1. Connect the M-MDS to the DLC-2.
2. After the vehicle is identified, select the following items from the initialization screen of the M-MDS.
   (1) Select "Self Test".
   (2) Select "All CMDTCs".
3. Verify the DTC according to the directions on the screen.
   - If any DTCs are displayed, perform troubleshooting according to the corresponding DTC inspection after recording the snapshot data.
4. After completion of repairs, clear all DTCs stored in the SAS control module. (See CLEARING DTC.)

### ODDTC Self Test

1. Connect the M-MDS to the DLC-2.
2. After the vehicle is identified, select the following items from the initialization screen of the M-MDS.
   (1) Select "Self Test".
   (2) Select "Modules".
   (3) Select "RCM".
3. Verify the DTC according to the directions on the screen.
   - If any DTCs are displayed, perform troubleshooting according to the corresponding DTC inspection after recording the snapshot data.
4. After completion of repairs, clear all DTCs stored in the SAS control module. (See CLEARING DTC.)

### Snapshot Data Table

**Note**

- Snapshot data items are not displayed, according to detected DTC.

—: Not applicable

| Snapshot data item | Unit | | Definition | Data read/use method | Corresponding PID data monitor item |
|---|---|---|---|---|---|
| AAT | °C | °F | Ambient temperature | — | — |
| APP_STATUS | Accelerator Pedal Off/ Under20%/ Over20%/FAIL | | Accelerator pedal position status | — | — |
| CFG_STATUS | Config Complete/ Not Configured/ Config Error | | Instrument cluster configuration status | — | — |
| ECT_STATUS | Under 0 degrees C/ 0-Under 80 degrees C/ Over 80 degrees C/ FAIL | | Engine coolant temperature status | — | — |
| FAULT_CNT | — | | Number of malfunction detections | — | — |
| FIRST_DET_IG | hh:mm:ss*2 | | Time when initial malfunction occurs (IG-ON counter)<br>• Elapsed time from when ignition is switched ON (engine off or on) until SAS control module detects first malfunction<br>(See Snapshot counter pattern.) | — | — |

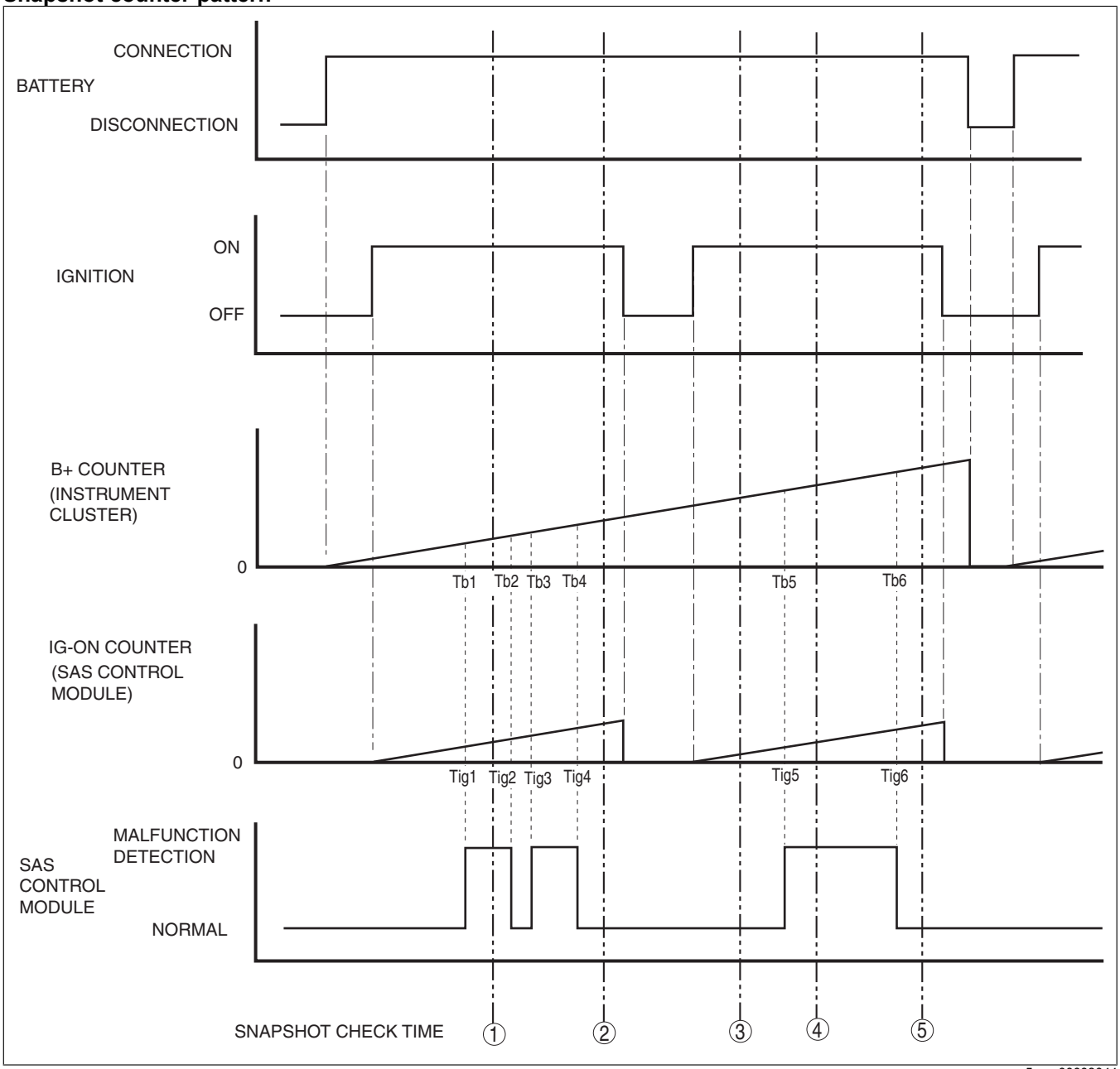
| Snapshot data item | Unit | Definition | Data read/use method | Corresponding PID data monitor item |
|---|---|---|---|---|
| IC_VPWR | V | Instrument cluster power supply voltage | • The SAS control module constantly receives the power supply voltage value of the instrument cluster sent via CAN signal from the instrument cluster.<br>• If a DTC is detected, the SAS control module records the power supply voltage of the instrument cluster when the DTC was detected, and it is displayed in the M-MDS. | VPWR*1 |
| IG-ON_TIMER | hh:mm:ss*2 | Elapsed time since ignition was switched ON<br>**Note**<br>• The instrument cluster records the elapsed time since the ignition was switched ON. | • The SAS control module constantly receives the elapsed time since the ignition was switched ON sent via CAN signal from the instrument cluster.<br>• If a DTC is detected, the SAS control module records the elapsed time since the ignition was switched ON when the DTC was detected, and it is displayed in the M-MDS. | — |
| LAST_CLR | hh:mm:ss*2 | Repair time for last malfunction (B+ counter)<br>• Elapsed time from when battery is connected until SAS control module detects that last malfunction is repaired (See Snapshot counter pattern.) | — | — |
| LAST_CLR_IG | hh:mm:ss*2 | Repair time for last malfunction (IG-ON counter)<br>• Elapsed time from when ignition is switched ON (engine off or on) until SAS control module detects that last malfunction is repaired (See Snapshot counter pattern.) | — | — |
| LAST_DET | hh:mm:ss*2 | Time when last malfunction occurs (B+ counter)<br>• Elapsed time from when battery is connected until SAS control module detects last malfunction (See Snapshot counter pattern.) | — | — |
| LAST_DET_IG | hh:mm:ss*2 | Time when last malfunction occurs (IG-ON counter)<br>• Elapsed time from when ignition is switched ON (engine off or on) until SAS control module detects last malfunction (See Snapshot counter pattern.) | — | — |

| Snapshot data item | Unit | Definition | Data read/use method | Corresponding PID data monitor item |
|---|---|---|---|---|
| PWR_MODE_KEY | Key Out/Key Recently Out (Position 0)/ Accessory (Position 1)/Post Ignition (Position 2)/Ignition On (Position 2)/ Running (Position 2)/ Running - Starting | • Key Out: Ignition switched to off<br>• Key Recently Out (Position 0): Elapsed time **within 3 s** since ignition was switched to off<br>• Accessory (Position 1): Ignition is switched to ACC<br>• Post Ignition (Position 2): Elapsed time **within 3 s** since ignition was switched ON<br>• Ignition On (Position 2): Ignition switched ON (engine off)<br>• Running (Position 2): Ignition switched ON (engine on)<br>• Running - Starting: Cranking condition | • The SAS control module constantly receives the ignition switch status sent via CAN signal from the instrument cluster.<br>• If a DTC is detected, the SAS control module records the ignition switch status when the DTC was detected, and it is displayed in the M-MDS. | — |
| RPM_STATUS | Engine Stop/ Under1500rpm/ Over1500rpm/ FAIL | Engine speed status | • The SAS control module constantly receives the engine speed sent via CAN signal from the instrument cluster.<br>• If a DTC is detected, the SAS control module records the engine speed when the DTC was detected, and it is displayed in the M-MDS. | TACHOMTR*1 |
| SHIFT_STATUS | P/N/ D/ R/ FAIL | Selector lever position status | • The SAS control module constantly receives the selector lever position sent via CAN signal from the instrument cluster.<br>• If a DTC is detected, the SAS control module records the selector lever position when the DTC was detected, and it is displayed in the M-MDS. | — |
| TOTAL_TIME | hh:mm:ss*2 | Accumulated total elapsed time since vehicle completion until SAS control module detects a DTC<br><br>**Note**<br>• When the ROOM removed, and the ignition is switched to off, the time is not included in the elapsed time. | The elapsed time when the SAS control module detected a DTC can be calculated by performing the following procedure.<br>1. Verify the PID item TOTAL_TIME of the instrument cluster.<br>2. Verify the snap shot data item TOTAL_TIME.<br>3. Subtract 2 from 1. | TOTAL_TIME*1 |

| Snapshot data item | Unit | | Definition | Data read/use method | Corresponding PID data monitor item |
|---|---|---|---|---|---|
| TOTAL_DIST | km | miles | Accumulated total traveled distance from completion of vehicle until SAS control module detects DTC (Odometer value in instrument cluster) | The distance traveled when the SAS control module detected a DTC can be calculated by performing the following procedure.<br>1. Verify the odometer value in the instrument cluster.<br>2. Verify the snap shot data item TOTAL_DIST.<br>3. Subtract 2 from 1. | — |
| VPWR | V | | SAS control module power supply malfunction | — | VPWR_IGA |
| VSPD_STATUS | Stop/<br>0-10km/h/<br>Over10km/h/<br>FAIL | | Vehicle speed status | • The SAS control module constantly receives the vehicle speed sent via CAN signal from the instrument cluster.<br>• If a DTC is detected, the SAS control module records the vehicle speed when the DTC was detected, and it is displayed in the M-MDS. | SPEEDOMTR* 1 |

*1 : Instrument cluster PID (See PID/DATA MONITOR TABLE [INSTRUMENT CLUSTER].)
*2 : The seconds may be indicated after the decimal point.

**Snapshot counter pattern**




ac5wzw00003044

| Snap-shot check time | FAULT_CNT | FIRST_DET_IG | LAST_CLR | LAST_CLR_IG | LAST_DET | LAST_DET_IG | TOTAL_TIME |
|---|---|---|---|---|---|---|---|
| | Number of malfunction detections | Time when initial malfunction occurs (IG-ON counter) | Repair time for last malfunction (B+ counter) | Repair time for last malfunction (IG-ON counter) | Time when last malfunction occurs (B+ counter) | Time when last malfunction occurs (IG-ON counter) | Time when first malfunction occurs (B+ counter) |
| 1 | 1 | Tb1 | - | - | Tb1 | Tig1 | Tig1 |
| 2 | 2 | Tb1 | Tb4 | Tig4 | Tb3 | Tig3 | Tig1 |
| 3 | 2 | Tb1 | Tb4 | Tig4 | Tb3 | Tig3 | Tig1 |
| 4 | 3 | Tb1 | Tb4 | Tig4 | Tb5 | Tig5 | Tig1 |
| 5 | 3 | Tb1 | Tb6 | Tig6 | Tb5 | Tig5 | Tig1 |