



# DTC Summaries

## W5A-580 Transmission Control System – 1998 MY

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### **OBD II MONITORING CONDITIONS:**

When testing for OBD II DTC reoccurrence, it can be determined if the Service Drive Cycle was of sufficient length by performing a PDU “Systems Readiness Test”.

The Systems Readiness Test is accessed via the PDU menu structure.

Further confirmation of the System Readiness Test status is available by retrieving the logged DTCs.

If DTC P1000 is logged in memory, the on-board diagnostic tests **have not** been completed;

If DTC P1111 is logged in memory, all on-board diagnostic tests **have** been completed.

### **NON OBD II MONITORING CONDITIONS:**

When testing for reoccurrence of non OBD II DTCs, ensure that the vehicle is operated as described in MONITORING CONDITIONS for the particular DTC. Retrieve non OBD II DTCs from the TCM via PDU through the Data Link Connector (DLC).

**Refer to Page 2 for important information regarding the use of this Summary.**

## NOTES:

MONITORING CONDITIONS "SERVICE DRIVE CYCLE" For the particular DTC. Operate the vehicle as described to check for a reoccurrence of the DTC.

OBD II Y YES – indicates that the DTC is an OBD II DTC.  
N NO – indicates that the DTC is a non OBD II DTC.

CHECK ENGINE MIL (CK ENG) 1 1 TRIP – indicates that the CHECK ENGINE MIL is activated by a fault occurring during ONE "TRIP".  
2 2 TRIPS – indicates that the CHECK ENGINE MIL is activated by a fault occurring during TWO CONSECUTIVE "TRIPS".  
N NO – indicates that the CHECK ENGINE MIL is not activated

OTHER N None  
@F Indicator is activated when fault is detected.  
R RED MIL  
A AMBER MIL  
M MESSAGE "GEARBOX FAULT"

DEFAULT ACTION TCM default action

LOGGED / FLAGGED Logged – DTC stored in memory buffer (TCM or ECM); Flagged – DTC stored in ECM memory / CHECK ENGINE MIL activated.

LIMP HOME DEFAULTS Two types of limp home defaults may occur – electronic limp home and mechanical limp home.

**Electronic limp home** occurs when an electrical fault is detected. If the vehicle is being driven, electronic limp home maintains the selected gear until the ignition is switched OFF. When the vehicle is restarted (after a minimum 10 second wait), the transmission will operate in 2nd and REVERSE only. The default will remain in effect until the fault is corrected and the DTC erased from memory.

**Mechanical limp home** occurs when a mechanical / hydraulic fault is detected. When the fault is detected, the transmission shifts into 3rd gear and remains in this gear. The default will cancel on the next ignition cycle, provided the fault is no longer present.

**REFERENCE: It is recommended that the applicable Electrical Guide be referenced when using the information contained in this document.**

## PDU DATALOGGER ACRONYMS

|         |  |      |   |
|---------|--|------|---|
| CHKTRAN | Transmission fault indicator (Amber / Message) | TA3  | Traction status 3                         |
| DTCS    | Diagnostic trouble codes                       | TACK | Torque reduction acknowledge              |
| ECT     | Engine coolant temperature                     | TCC  | Torque converter clutch                   |
| IGN1+   | Ignition positive supply                       | TIS  | Transmission input speed                  |
| KDSW    | Kickdown switch                                | TOS  | Transmission output speed                 |
| MPROBE  | Measurement probe                              | TOT  | Transmission oil temperature              |
| PMODEA  | Performance mode switch A                      | TPS  | Throttle position sensor                  |
| PPS     | Pedal position sensor                          | TREQ | Torque reduction request                  |
| PRMD    | Modulation pressure regulator                  | TRSA | Transmission range switch A (CAN message) |
| PRSD    | Shift pressure regulator                       | TRSB | Transmission range switch B (CAN message) |
| RPM     | Revolutions per/minute                         | TRSC | Transmission range switch C (CAN message) |
| SOL1    | Shift solenoid 1 (A)                           |      |   |
| SOL2    | Shift solenoid 2 (B)                           |      |   |
| SOL3    | Shift solenoid 3 (C)                           |      |   |
| SWL0    | Gear position switch input L0                  |      |   |
| SWL1    | Gear position switch input L1                  |      |   |
| SWL2    | Gear position switch input L2                  |      |   |
| SWL3    | Gear position switch input L3                  |      |   |

| DTC   | FAULT DESCRIPTION   | MONITORING CONDITIONS  | OBD II | CK ENG | OTHER        | DEFAULT ACTION  | POSSIBLE CAUSES  |
|-------|---|--|--------|--------|--------------|---|--|
| P0702 | TCM solenoid valves and speed sensors supply voltage(s) malfunction   | Ignition ON 5 seconds  | Y      | 2      | @F<br>[A, M] | When the fault is detected:<br>- TCM adopts transmission electronic limp home mode                              | TCM to transmission speed sensors supply circuit:<br>open circuit, high resistance, short circuit to ground or short circuit to B+ voltage<br>TCM to transmission solenoid valves supply circuit: open circuit, high resistance or short circuit to ground<br>TCM internal failure |
| P0705 | Dual linear switch signal(s) malfunction  | Ignition ON 5 seconds  | Y      | 2      | @F<br>[A, M] | When the fault is detected:<br>- TCM adopts transmission electronic limp home mode<br>- ECM limits engine power | TCM to dual linear switch circuits (4):<br>high resistance, short circuit to ground or short circuit to B+ voltage<br>Dual linear switch failure   |
| P0706 | Dual linear switch signals missing<br><br>Note:<br>The DTC will be cleared by the TCM if the fault condition is corrected while the vehicle is operating. The DTC can only be read if the fault is present during diagnostic testing. | Ignition ON 5 seconds<br><br>Note:<br>If the fault is present at start-up, the engine will not crank and the J-gate will not be illuminated. | N      | N      | N            | If the fault is detected while driving:<br>- TCM adopts transmission electronic limp home mode                  | Selector lever in intermediate position between P,R,N,D,4,3,2<br>TCM to dual linear switch circuits (4):<br>open circuit (connector disconnected)<br>Dual linear switch failure  |

| DTC   | FAULT DESCRIPTION   | MONITORING CONDITIONS | OBD II | CK ENG | OTHER        | DEFAULT ACTION  | POSSIBLE CAUSES  |
|-------|---|-----------------------|--------|--------|--------------|---|--|
| P0710 | Transmission fluid temperature sensor circuit malfunction | Ignition ON 5 seconds | N      | N      | @F<br>[A,M*] | When the fault is detected:<br>- TCM substitutes the engine coolant temperature for the transmission fluid temperature (via CAN)<br><br>*MESSAGE: HIGH TEMP GEARBOX | Selector cable adjustment / installation incorrect<br>Dual linear switch adjustment incorrect<br>Transmission to TCM fluid temperature sensor sense circuit: open circuit, high resistance, short circuit to high voltage or short circuit to ground<br>Transmission to TCM speed / temperature sensors ground circuit: open circuit or short circuit to high voltage (DTC P0715 will also be flagged)<br>Transmission internal fluid temperature sensor sense circuit: open circuit, high resistance or short circuit to ground<br>Transmission internal reed switch (not used) failure<br>Transmission internal speed / temperature sensors ground circuit: open circuit voltage (DTC P0715 will also be flagged)<br>Transmission fluid temperature sensor failure |

| DTC   | FAULT DESCRIPTION   | MONITORING CONDITIONS   | OBD II | CK ENG | OTHER        | DEFAULT ACTION  | POSSIBLE CAUSES   |
|-------|---|---|--------|--------|--------------|---|---|
| P0715 | n2 and / or n3 Speed sensor circuits malfunction<br><br>Note:<br>This DTC will apply to the n3 speed sensor circuit only after the n2 speed sensor circuit is verified OK | Drive vehicle > 25 mph (41 km/h); 3rd or 4th gear; no shift in progress<br><br>Note:<br>If DTCs P1632 and P1720 are logged, the "service drive cycle" cannot be completed.  | Y      | 2      | @F<br>[A, M] | When the fault is detected:<br>- TCM adopts transmission electronic limp home mode                          | Transmission to TCM n2 speed sensor sense circuit: open circuit, high resistance, short circuit to high voltage or short circuit to ground<br>Transmission to TCM speed / temperature sensors ground circuit: open circuit or short circuit to high voltage (DTC P0710 will also be flagged)<br>Transmission internal n2 speed sensor sense circuit: open circuit, high resistance or short circuit to ground<br>Transmission internal speed / temperature sensors ground circuit: open circuit voltage (DTC P0710 will also be flagged)<br>n2 Speed sensor failure<br>Transmission to TCM speed sensors supply circuit, high resistance, short circuit to ground or short circuit to B+ voltage<br>Transmission to TCM n3 speed sensor sense circuit: open circuit, high resistance, short circuit to high voltage or short circuit to ground<br>Transmission internal n3 speed sensor sense circuit: open circuit, high resistance or short circuit to ground<br>n3 Speed sensor failure<br>Transmission mechanical failure |
| P0730 | Incorrect gear ratio  | Drive vehicle so that transmission shifts through all gears; <b>repeat several times</b><br><br>Note:<br>If any of the following DTCs are logged, the "service drive cycle" cannot be completed: P0705, P0706, P0715 (n2 sensor), P1720, P1796. | Y      | 2      | @F<br>[A, M] | When fault is detected:<br>- TCM adopts transmission mechanical limp home mode<br>- ECM limits engine power | Transmission oil level low<br>Transmission mechanical / hydraulic failure   |

| DTC   | FAULT DESCRIPTION  | MONITORING CONDITIONS   | OBD II | CK ENG | OTHER        | DEFAULT ACTION  | POSSIBLE CAUSES  |
|-------|--|---|--------|--------|--------------|---|--|
| P0740 | Torque converter clutch (TCC) solenoid valve circuit malfunction; TCC stuck on | Ignition ON; selector in P or N for 5 SEC. seconds; then, drive vehicle so that transmission shifts through all gears; repeat several times<br><br>Note:<br>If any of the following DTCs are logged, the "TCC stuck on service drive cycle" cannot be completed: P0715, P1632, P1796. | Y      | 2      | @F<br>[A, M] | When a TCC solenoid valve circuit fault is detected:<br>- TCM adopts transmission electronic limp home mode | Transmission to TCM TCC solenoid valve drive circuit: open circuit, high resistance, short circuit to B+ voltage or short circuit to ground<br>Transmission internal TCC solenoid valve drive circuit: open circuit, high resistance or short circuit to ground<br>TCC solenoid valve failure<br>Torque converter mechanical / hydraulic failure<br>Transmission mechanical / hydraulic failure                                |
| P0748 | Modulation pressure (MD) control solenoid valve circuit malfunction            | Drive vehicle so that transmission shifts through all gears; <b>repeat several times</b>  | Y      | 2      | @F<br>[A, M] | When the fault is detected:<br>- TCM adopts transmission electronic limp home mode                          | Transmission to TCM MD solenoid valve drive circuit: open circuit, high resistance, short circuit to B+ voltage or short circuit to ground<br>Transmission internal MD solenoid valve drive circuit: open circuit, high resistance or short circuit to ground<br>MD solenoid valve failure   |
| P0753 | Shift solenoid valve A (1st – 2nd; 4th – 5th) circuit malfunction              | Drive vehicle so that transmission shifts through all gears; <b>repeat several times</b>  | Y      | 2      | @F<br>[A, M] | When the fault is detected:<br>- TCM adopts transmission electronic limp home mode                          | Transmission to TCM shift solenoid valve A (1st – 2nd; 4th – 5th) drive circuit: open circuit, high resistance, short circuit to B+ voltage or short circuit to ground<br>Transmission internal shift solenoid valve A (1st – 2nd; 4th – 5th) drive circuit: open circuit, high resistance or short circuit to ground<br>Shift solenoid valve A (1st – 2nd; 4th – 5th) failure<br>Control valve (valve body) hydraulic failure |

| DTC   | FAULT DESCRIPTION                                      | MONITORING CONDITIONS   | OBD II | CK ENG | OTHER        | DEFAULT ACTION  | POSSIBLE CAUSES   |
|-------|--|---|--------|--------|--------------|---|---|
| P0758 | Shift solenoid valve B (2nd – 3rd) circuit malfunction | Drive vehicle so that transmission shifts through all gears; <b>repeat several times</b>  | Y      | 2      | @F<br>[A, M] | When the fault is detected:<br>– TCM adopts transmission electronic limp home mode                              | Transmission to TCM shift solenoid valve B (2nd – 3rd) drive circuit: open circuit, high resistance, short circuit to B+ voltage or short circuit to ground<br>Transmission internal shift solenoid valve B (2nd – 3rd) drive circuit: open circuit, high resistance or short circuit to ground<br>Shift solenoid valve B (2nd – 3rd) failure<br>Control valve (valve body) hydraulic failure |
| P0763 | Shift solenoid valve C (3rd – 4th) circuit malfunction | Drive vehicle so that transmission shifts through all gears; <b>repeat several times</b>  | Y      | 2      | @F<br>[A, M] | When the fault is detected:<br>– TCM adopts transmission electronic limp home mode                              | Transmission to TCM shift solenoid valve C (3rd – 4th) drive circuit: open circuit, high resistance, short circuit to B+ voltage or short circuit to ground<br>Transmission internal shift solenoid valve C (3rd – 4th) drive circuit: open circuit, high resistance or short circuit to ground<br>Shift solenoid valve C (3rd – 4th) failure<br>Control valve (valve body) hydraulic failure |
| P0780 | Gear shift malfunction                                 | Drive vehicle so that transmission shifts through all gears; <b>repeat several times</b><br><br>Note:<br>If any of the following DTCs are logged, the “service drive cycle” cannot be completed: P0705, P0706, P0715 (n2 sensor), P1720, P1796. | Y      | 2      | @F<br>[A, M] | When the fault is detected:<br>– TCM adopts transmission electronic limp home mode<br>– ECM limits engine power | Transmission oil level low<br>Transmission oil condition<br>Transmission mechanical / hydraulic failure   |
| P1601 | TCM memory / computer fault                            | Ignition ON 5 seconds   | Y      | 1      | @F<br>[A, M] | When the fault is detected:<br>– TCM adopts transmission electronic limp home mode                              | TCM – Dual linear switch – transmission wiring harness and/or connector(s) fault.<br>(Short circuit; open circuit; high resistance)<br>TCM failure  |
| P1608 | TCM software fault                                     | Ignition ON 5 seconds   | N      | N      | N            | None  | TCM failure   |



| DTC   | FAULT DESCRIPTION  | MONITORING CONDITIONS  | OBD II | CK ENG | OTHER        | DEFAULT ACTION   | POSSIBLE CAUSES   |
|-------|--|--|--------|--------|--------------|--|---|
| P1632 | ABS front wheel speed CAN messages corrupted<br>or<br>EMS CAN individual message corrupted – pedal position;<br>engine speed; engine torque;<br>engine coolant temperature | Engine at normal operating temperature;<br>drive vehicle   | N      | N      | N            | When fault is detected:<br>– Front wheel speed – TCM stops calculating vehicle lateral acceleration<br>– Pedal position – TCM substitutes value of 25.6%<br>– Engine speed – TCM substitutes value of 750 rpm; TCC remains released<br>– Engine torque – TCM substitutes value of 600 Nm (443 lb ft)<br>– Engine coolant temperature – TCM substitutes value of 80 °C (176 °F) | CAN circuit malfunction (other CAN nodes affected)<br>ABS/TCCM – CAN front wheel speed data corrupted<br>ABS/TC fault<br>ECM – CAN data corrupted<br>EMS fault  |
| P1720 | ABS rear wheel speed CAN messages corrupted<br>or<br>ABS token message corrupted   | Drive vehicle; ABS/TC inactive; ABS/TC active  | Y      | 2      | N            | When the fault is detected:<br>– TCM adopts transmission electronic limp home mode   | CAN circuit malfunction (other CAN nodes affected)<br>ABS/TCCM – CAN rear wheel speed data corrupted<br>ABS/TC fault  |
| P1727 | n3 Speed – overspeed detected  | Drive vehicle so that transmission shifts through all gears: <b>repeat several times</b>   | N      | N      | N            | None   | Transmission mechanical failure   |
| P1744 | Torque converter clutch (TCC) failure (stuck off)  | Drive vehicle on level road at highway cruising speed; accelerate slowly;<br>decelerate to highway cruising speed<br><br>Note:<br>If any of the following DTCs are logged, the “service drive cycle” cannot be completed: P0715, P1632, P1796. | Y      | 1      | @F<br>[A, M] | When the fault is detected:<br>– TCM inhibits TCC control  | Transmission to TCM TCC solenoid valve drive circuit: open circuit, high resistance, short circuit to B+ voltage or short circuit to ground<br>Transmission internal TCC solenoid valve drive circuit: open circuit, high resistance or short circuit to ground<br>TCC solenoid valve failure<br>Torque converter mechanical / hydraulic failure<br>Transmission mechanical / hydraulic failure |

| DTC   | FAULT DESCRIPTION  | MONITORING CONDITIONS  | OBD II | CK ENG | OTHER        | DEFAULT ACTION  | POSSIBLE CAUSES   |
|-------|--|--|--------|--------|--------------|---|---|
| P1748 | Shift pressure (SD) control solenoid valve circuit malfunction       | Drive vehicle so that transmission shifts through all gears; <b>repeat several times</b>   | Y      | 2      | @F<br>[A, M] | When the fault is detected:<br>- TCM adopts transmission electronic limp home mode  | Transmission to TCM SD solenoid valve drive circuit: open circuit, high resistance, short circuit to B+ voltage or short circuit to ground<br>Transmission internal SD solenoid valve drive circuit: open circuit, high resistance or short circuit to ground SD solenoid valve failure |
| P1780 | Torque reduction acknowledge (CAN message) incorrect                 | Drive vehicle so that transmission shifts through all gears; <b>repeat several times</b><br><br>Note:<br>If any of the following DTCs are logged, the "service drive cycle" cannot be completed: P1632, P1796. | N      | N      | N            | None  | CAN circuit malfunction (other CAN nodes affected)<br>ECM failure<br>TCM failure  |
| P1794 | Battery power supply malfunction                                     | Ignition ON 5 seconds  | N      | N      | N            | When the fault is detected:<br>- TCM adopts transmission electronic limp home mode  | Battery power supply circuit fuse blown<br>Battery power supply circuit high resistance, open circuit or short circuit  |
| P1796 | CAN circuit malfunction  | Ignition ON 5 seconds  | Y      | 2      | N            | When the fault is detected:<br>- TCM adopts transmission electronic limp home mode  | Other CAN node(s) related faults<br>CAN wiring circuit: high resistance or short circuit<br>CAN control module(s) failure(s) – check for additional DTC(s) to locate control module source  |
| P1797 | CAN ECM messages (all) corrupted or<br>CAN ECM token message missing | Ignition ON 5 seconds  | Y      | 2      | N            | When fault is detected:<br>- CAN ECM messages (all) corrupted – TCM substitutes high engine torque and speed values (to prevent transmission damage)<br>- CAN ECM token message missing – TCM adopts transmission electronic limp home mode | Other CAN node(s) related faults<br>CAN wiring circuit – TCM to ECM: open circuit<br>CAN wiring circuit: high resistance or short circuit<br>ECM failure  |

| DTC   | FAULT DESCRIPTION              | MONITORING CONDITIONS | OBD II | CK ENG | OTHER | DEFAULT ACTION | POSSIBLE CAUSES  |
|-------|--------------------------------|-----------------------|--------|--------|-------|----------------|--|
| P1798 | CAN INST token message missing | Ignition ON 5 seconds | N      | N      | N     | None           | Other CAN node(s) related faults<br>CAN wiring circuit – TCM to INST: open circuit<br>CAN wiring circuit: high resistance or short circuit<br>INST failure |

