How to use the shift selector to read
oil level and diagnostic codes on
3000/4000 Series Allison transmissions
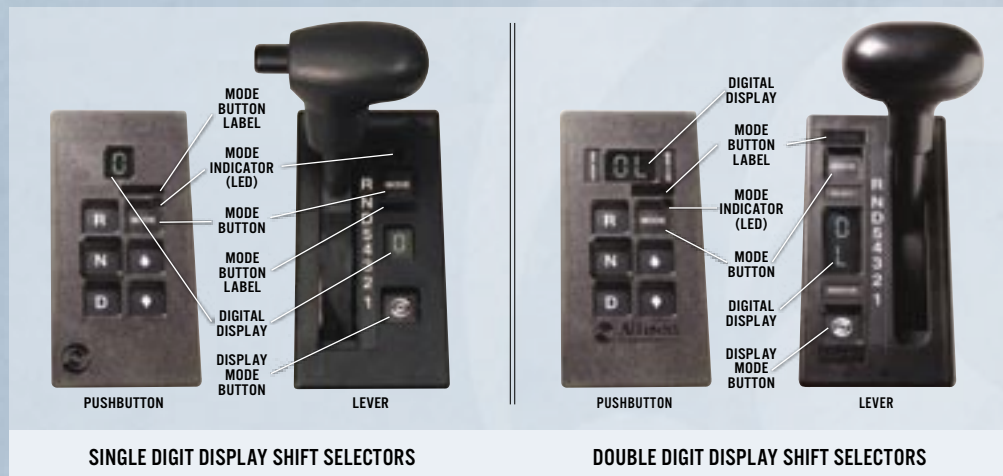
**If it's not Allison, it's not Automatic.™**

**Allison Transmission**

**Allison Transmission**

## The Allison Advantage

Your Allison Automatic is fully electronically controlled. The Allison electronic controls package oversees the operation of the transmission, controlling transmission upshifts and downshifts, and providing important information on the operation of your drive system.

Through readouts on your shift selector, you will be able to monitor transmission oil levels and read diagnostic codes. This brochure will help you understand the readouts, and thereby help you enjoy long, trouble-free operation of your Allison Automatic.

MODE BUTTON LABEL
MODE INDICATOR (LED)
MODE BUTTON
MODE BUTTON LABEL
DIGITAL DISPLAY
DISPLAY MODE BUTTON
PUSHBUTTON
LEVER

**SINGLE DIGIT DISPLAY SHIFT SELECTORS**

DIGITAL DISPLAY
MODE BUTTON LABEL
MODE INDICATOR (LED)
MODE BUTTON
DIGITAL DISPLAY
DISPLAY MODE BUTTON
PUSHBUTTON
LEVER

**DOUBLE DIGIT DISPLAY SHIFT SELECTORS**

Vehicle manufacturers may choose different types of shift selectors for their vehicles. The shift selector in your Allison-equipped vehicle will be similar to one of the pushbutton or lever styles as shown above.

## Checking Fluid Levels

The transmission fluid cools, lubricates and transmits hydraulic power, so it is important the proper fluid level be maintained at all times. If the fluid level is too low, the converter and clutches do not receive an adequate supply of fluids. If the fluid level is too high, the fluid can aerate, causing the transmission to shift erratically or overheat.

If the transmission is equipped with an oil level sensor, oil level information can be displayed on the shift selector.

Use the following procedure to display oil level information if the transmission is equipped with the option.

### To enter the oil level display mode:

1. Park the vehicle on a level surface, shift to **N** (Neutral) and apply the parking brake.

2. Using a *pushbutton shift selector,* simultaneously press the **UP** and **DOWN** arrow buttons.
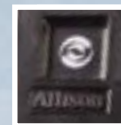
   Using a *lever shift selector,* press the **DISPLAY MODE** button one time.

3. A two-minute countdown begins when the following conditions are met:

   – Engine is at idle.
   – The fluid temperature is above 60˚C (140˚F) and below 104˚C (220˚F).
   – Transmission output shaft is stopped.
   – Transmission is in N (Neutral).
   – The vehicle has been stationary for approximately two minutes to allow the fluid to settle.

Oil level will be displayed at the end of the two-minute countdown. During the countdown, the display flashes and a countdown occurs reducing by one digit every 15 seconds (for example 8, 7, 6, 5, 4, 3, 2, 1).

## SINGLE DIGIT DISPLAY

A delayed fluid level check for *pushbutton and lever selectors* with single digit display is indicated by a "−" in the display window followed by a numerical countdown. The countdown, starting at 8, indicates the time remaining in the two-minute setting period.

## DOUBLE DIGIT DISPLAY

The indication of a delayed fluid level check for *pushbutton and lever selectors* with double digit windows is a flashing display and a digit countdown from 8 to 1 in the **SELECT/MONITOR** window display.

4. After the two-minute countdown, the shift selector displays the oil level data as follows:

- **CORRECT FLUID LEVEL** – "**oL**" is displayed ("**oL**" represents "Fluid (Oil) Level Check Mode"), followed by "**oK.**" The "**oK**" display indicates the fluid is within the correct fluid level zone. The sensor display and the transmission dipstick may not agree exactly because the oil level sensor compensates for fluid temperature.

- **LOW FLUID LEVEL** – "**oL**" is displayed ("**oL**" represents "Fluid (Oil) Level Check Mode") followed by "**Lo**" ("**Lo**" represents "Low Oil Level") and the number of quarts the transmission fluid is low.

    *Example:* **oL Lo 02**    "2" *indicates that 2 additional quarts of fluid will bring the fluid level within the middle of the* "**oK**" *zone.*

- **HIGH FLUID LEVEL** – "**oL**" is displayed ("**oL**" represents "Fluid (Oil) Level Check Mode") followed by "**HI**" ("**HI**" represents "High Oil Level") and the number of quarts the transmission fluid is overfilled.

    *Example:* **oL HI 1**    "1" *indicates 1 quart of fluid above the full transmission level.*

- **INVALID FOR DISPLAY** – Failure to meet any of the above conditions will stop the two-minute countdown. The shift selector will display "**oL**" ("**oL**" represents "Fluid (Oil) Level Check Mode") followed by "**−**" (for single digit display) or "**− −**" (for double digit display) and a numerical display. The numerical display is a fault code and indicates conditions are not proper to receive the fluid level information, or that there is a system malfunction.

The fault codes that may be encountered are shown in the Fluid Level Fault Codes tables:

| SINGLE DIGIT DISPLAY FAULT CODE | FLUID LEVEL FAULT CODE DESCRIPTION | DOUBLE DIGIT DISPLAY FAULT CODE |
|---|---|---|
| o, L, −, 0, X | Setting time too short | oL, − −, 0X |
| o, L, −, 5, 0 | Engine speed too low | oL, − −, 50 |
| o, L, −, 5, 9 | Engine speed too high | oL, − −, 59 |
| o, L, −, 6, 5 | Neutral must be selected | oL, − −, 65 |
| o, L, −, 7, 0 | Sump fluid temperature too low | oL, − −, 70 |
| o, L, −, 7, 9 | Sump fluid temperature too high | oL, − −, 79 |
| o, L, −, 8, 9 | Output shaft rotation | oL, − −, 89 |
| o, L, −, 9, 5 | Oil level sensor failed* | oL, − −, 95 |

*Report sensor failure display to a distributor or dealer in your area.

**CAUTION:** *A low or high fluid level can cause overheating and irregular shift patterns. Incorrect fluid level can damage the transmission.*

## To exit the oil level display mode:

### SINGLE DIGIT DISPLAY

- *Pushbutton selector:*
  Press the **NEUTRAL** button or simultaneously press the **UP** and **DOWN** arrows twice.

- *Lever selector:*
  Press the **DISPLAY** button twice or momentarily move the shift selector to any range and back to neutral.

### DOUBLE DIGIT DISPLAY

- *Pushbutton selector:*
  Press any range button.

- *Lever selector:*
  Press the **DISPLAY MODE** (diagnostic) button once.
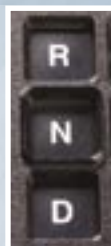
## Diagnostics

The electronic control system of your Allison Automatic is programmed to inform the operator of a problem with the transmission system and automatically alert the operator. When the Electronic Control Unit (ECU) detects a problem condition, the ECU:

- – Restricts shifting
- – Illuminates the **CHECK TRANS** * light on the instrument panel
- – Registers a diagnostic code

Continued illumination of the **CHECK TRANS** light during vehicle operation (other than start-up) indicates that the ECU has signaled a diagnostic code.

* *For some problems, diagnostic codes may be registered without the ECU activating the **CHECK TRANS** light. Your Allison Transmission authorized service outlet should be consulted whenever there is a transmission-related concern. They have the equipment to check for diagnostic codes and to correct problems which arise.*

## Displaying Active Diagnostic Codes

### To enter the diagnostic mode:

1. Bring the vehicle to a complete stop. Apply the parking brake.

2. Using a *pushbutton shift selector,* simultaneously press the **UP** and **DOWN** arrows once if the transmission does not have an oil level sensor and twice if the transmission is equipped with an oil level sensor.
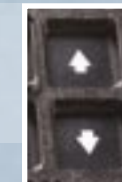
Using a *lever shift selector,* press the **DISPLAY MODE/DIAGNOSTIC** button once if the transmission does not have an oil level sensor and twice if the transmission is equipped with an oil level sensor.

**PUSHBUTTON**     **LEVER**

**SINGLE DIGIT DISPLAY SHIFT SELECTORS**

**PUSHBUTTON**     **LEVER**

**DOUBLE DIGIT DISPLAY SHIFT SELECTORS**

## To read the digital display codes:

Diagnostic codes will appear one digit at a time on a single digit display *lever or pushbutton selector*. They will appear two characters at a time on a double digit display pushbutton or lever selector.

### SINGLE DIGIT DISPLAY CODES

When the diagnostic mode is entered, the first code (position **d1**) is displayed as follows:

*Example Code:* **13 12**

*Code Position:* **d1** – *indicates that this is the first diagnostic code listed in the ECU memory.*

*Main Codes:* **13** - *(two digits displayed one at a time) are listed first and provide the general condition or area of a fault detected by the ECU.*

*Sub Code:* **12** - *(two digits displayed one at a time) is listed second and provides specific areas or conditions within the main code that caused the fault. This subcode indicates the problem is caused by low voltage.*

### DOUBLE DIGIT DISPLAY CODES

When the diagnostic mode is entered, the first code (position **d1**) is displayed as follows:

*Example Code:* **P 07 22**

*Displayed as:* **d1, P, 07, 22**

*The Code Position (**d1**) is the first item displayed, followed by the Diagnostic Trouble Code (DTC);\*\* **P, 07, 22**. Each item is displayed for about one second. The display cycles continuously until the next code list position is accessed by pressing the **MODE** button.*

** *Diagnostic Trouble Code (DTC) – The diagnostic trouble code number referring to the general condition or area of fault detected by the ECU.*

## To clear diagnostic codes:

1. **SINGLE DIGIT DISPLAYS**

   Press and hold the **MODE** button for approximately three seconds until the **MODE INDICATOR** (LED) flashes. Release the **MODE** button and active indicators will not be illuminated. To clear inactive codes, press and hold the **MODE** button for 10 seconds. Some codes are self-clearing and others require ignition cycles to clear.

   **DOUBLE DIGIT DISPLAYS**

   Press and hold the **MODE** button for 10 seconds to clear both active and inactive codes.

2. Be sure to record all codes displayed before they are cleared. This is essential for troubleshooting. Begin operating as normal.

3. Drive the vehicle and check for code recurrence. If codes continue to recur, bring the vehicle to an authorized Allison Transmission service outlet to diagnose and repair the problem causing the codes.

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**NOTE**: *This information is designed to give you an overview of the Oil Level Sensor and Diagnostics operation of your Allison Automatic, and is not intended to replace your Operator's Manual. Please refer to your Allison Automatic Operator's Manual for complete information on Diagnostic Codes and Oil Level Sensor operation.*

*To order an Operator's Manual, go to www.allisontransmission.com.*

*Or contact SGI, Inc.*
  *Attn: Allison Literature Fulfillment Desk*
  *8350 Allison Avenue*
  *Indianapolis, IN 46268*

  *Toll free: 888-666-5799*
  *International: 317-471-4995*

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## Diagnostic Transmission Codes

| MAIN CODE | SUB CODE | CODE DESCRIPTION |
|---|---|---|
| 13 | 12 | ECU INPUT VOLTAGE LOW |
| | 13 | ECU INPUT VOLTAGE MEDIUM LOW |
| | 23 | ECU INPUT VOLTAGE HIGH |
| 14 | 12 | OIL LEVEL SENSOR, FAILED LOW |
| | 23 | OIL LEVEL SENSOR, FAILED HIGH |
| 21 | 12 | THROTTLE POSITION SENSOR, FAILED LOW |
| | 23 | THROTTLE POSITION SENSOR, FAILED HIGH |
| 22 | 14 | ENGINE SPEED SENSOR |
| | 15 | TURBINE SPEED SENSOR |
| | 16 | OUTPUT SPEED SENSOR |
| 23 | 12 | PRIMARY SHIFT SELECTOR FAULT |
| | 13 | PRIMARY SHIFT SELECTOR MODE FAULT |
| | 14 | SECONDARY SHIFT SELECTOR FAULT |
| | 15 | SECONDARY SHIFT SELECTOR MODE FAULT |
| | 16 | SHIFT SELECTOR DISPLAY LINE FAULT |
| 24 | 12 | SUMP FLUID TEMPERATURE, COLD |
| | 23 | SUMP FLUID TEMPERATURE, HOT |
| 25 | 00 | OUTPUT SPEED SENSOR @ 0 RPM, LOW |
| | 11 | OUTPUT SPEED SENSOR @ 0 RPM, 1ST |
| | 22 | OUTPUT SPEED SENSOR @ 0 RPM, 2ND |
| | 33 | OUTPUT SPEED SENSOR @ 0 RPM, 3RD |
| | 44 | OUTPUT SPEED SENSOR @ 0 RPM, 4TH |
| | 55 | OUTPUT SPEED SENSOR @ 0 RPM, 5TH |
| | 66 | OUTPUT SPEED SENSOR @ 0 RPM, 6TH |
| | 77 | OUTPUT SPEED SENSOR @ 0 RPM, REVERSE |
| 26 | 00 | THROTTLE SOURCE NOT DETECTED |
| | 11 | ENGINE COOLANT SOURCE NOT DETECTED |
| 32 | 00 | C3 PRESSURE SWITCH OPEN IN LOW |
| | 33 | C3 PRESSURE SWITCH OPEN IN 3RD |
| | 55 | C3 PRESSURE SWITCH OPEN IN 5TH |
| | 77 | C3 PRESSURE SWITCH OPEN IN REVERSE |
| 33 | 12 | SUMP OIL TEMPERATURE SENSOR, FAILED LOW |
| | 23 | SUMP OIL TEMPERATURE SENSOR, FAILED HIGH |
| 34 | 12 | CALIBRATION COMPATIBILITY WRONG |
| | 13 | CALIBRATION BLOCK CHECKSUM |
| | 14 | POWER OFF BLOCK CHECKSUM |
| | 15 | DIAGNOSE QUEUE BLOCK CHECKSUM |

## Diagnostic Transmission Codes

| MAIN CODE | SUB CODE | CODE DESCRIPTION |
|---|---|---|
| 34 | 16 | REAL TIME BLOCK CHECKSUM |
| | 17 | CUSTOMER MODIFIABLE CONSTANTS CHECKSUM |
| 35 | 00 | POWER INTERRUPTION |
| | 16 | REAL TIME WRITE INTERRUPTION |
| 36 | 00 | HARDWARE/SOFTWARE NOT COMPATIBLE |
| | 01 | TID NOT COMPATIBLE W/HARDWARE/SOFTWARE |
| | 02 | TID DID NOT COMPLETE |
| 42 | 12 | A SOLENOID SHORTED TO BATTERY |
| | 13 | B SOLENOID SHORTED TO BATTERY |
| | 14 | C SOLENOID SHORTED TO BATTERY |
| | 15 | D SOLENOID SHORTED TO BATTERY |
| | 16 | E SOLENOID SHORTED TO BATTERY |
| | 21 | F SOLENOID SHORTED TO BATTERY |
| | 22 | G SOLENOID SHORTED TO BATTERY |
| | 23 | H SOLENOID SHORTED TO BATTERY |
| | 24 | J SOLENOID SHORTED TO BATTERY |
| | 26 | N SOLENOID SHORTED TO BATTERY |
| 44 | 12 | A SOLENOID SHORTED TO GROUND |
| | 13 | B SOLENOID SHORTED TO GROUND |
| | 14 | C SOLENOID SHORTED TO GROUND |
| | 15 | D SOLENOID SHORTED TO GROUND |
| | 16 | E SOLENOID SHORTED TO GROUND |
| | 21 | F SOLENOID SHORTED TO GROUND |
| | 22 | G SOLENOID SHORTED TO GROUND |
| | 23 | H SOLENOID SHORTED TO GROUND |
| | 24 | J SOLENOID SHORTED TO GROUND |
| | 26 | N SOLENOID SHORTED TO GROUND |
| 45 | 12 | A SOLENOID CIRCUIT OPEN |
| | 13 | B SOLENOID CIRCUIT OPEN |
| | 14 | C SOLENOID CIRCUIT OPEN |
| | 15 | D SOLENOID CIRCUIT OPEN |
| | 16 | E SOLENOID CIRCUIT OPEN |
| | 21 | F SOLENOID CIRCUIT OPEN |
| | 22 | G SOLENOID CIRCUIT OPEN |
| | 23 | H SOLENOID CIRCUIT OPEN |
| | 24 | J SOLENOID CIRCUIT OPEN |
| | 26 | N SOLENOID CIRCUIT OPEN |

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# Diagnostic Transmission Codes

| MAIN CODE | SUB CODE | CODE DESCRIPTION |
|---|---|---|
| 46 | 21 | F SOLENOID CIRCUIT OVERCURRENT |
|  | 26 | N & H SOLENOID CIRCUIT OVERCURRENT |
|  | 27 | A-HI SOLENOID CIRCUIT OVERCURRENT |
| 51 | 01 | OFFGOING RATIO TEST, LOW TO 1 |
|  | 10 | OFFGOING RATIO TEST, 1 TO LOW |
|  | 12 | OFFGOING RATIO TEST, 1 TO 2 |
|  | 21 | OFFGOING RATIO TEST, 2 TO 1 |
|  | 23 | OFFGOING RATIO TEST, 2 TO 3 |
|  | 24 | OFFGOING RATIO TEST, 2 TO 4 |
|  | 35 | OFFGOING RATIO TEST, 3 TO 5 |
|  | 42 | OFFGOING RATIO TEST, 4 TO 2 |
|  | 43 | OFFGOING RATIO TEST, 4 TO 3 |
|  | 45 | OFFGOING RATIO TEST, 4 TO 5 |
|  | 46 | OFFGOING RATIO TEST, 4 TO 6 |
|  | 53 | OFFGOING RATIO TEST, 5 TO 3 |
|  | 64 | OFFGOING RATIO TEST, 6 TO 4 |
|  | 65 | OFFGOING RATIO TEST, 6 TO 5 |
|  | XY | OFFGOING RATIO TEST, X TO Y |
| 52 | 01 | OFFGOING C3PS TEST, LOW TO 1 |
|  | 08 | OFFGOING C3PS TEST, LOW TO N1 |
|  | 32 | OFFGOING C3PS TEST, 3 TO 2 |
|  | 34 | OFFGOING C3PS TEST, 3 TO 4 |
|  | 54 | OFFGOING C3PS TEST, 5 TO 4 |
|  | 56 | OFFGOING C3PS TEST, 5 TO 6 |
|  | 71 | OFFGOING C3PS TEST, REVERSE TO 1 |
|  | 72 | OFFGOING C3PS TEST, REVERSE TO 2 |
|  | 78 | OFFGOING C3PS TEST, REVERSE TO N1 |
|  | 99 | OFFGOING C3PS TEST, N3 TO N2 |
|  | XY | OFFGOING C3PS TEST, X TO Y |
| 53 | 08 | OFFGOING SPEED TEST, LOW TO N1 |
|  | 09 | OFFGOING SPEED TEST, L TO NNC |
|  | 18 | OFFGOING SPEED TEST, 1 TO N1 |
|  | 19 | OFFGOING SPEED TEST, 1 TO RELS |
|  | 28 | OFFGOING SPEED TEST, 2 TO N1 |
|  | 29 | OFFGOING SPEED TEST, 2 TO N2 |
|  | 38 | OFFGOING SPEED TEST, 3 TO N1 |
|  | 39 | OFFGOING SPEED TEST, 3 TO N3 |

# Diagnostic Transmission Codes

| MAIN CODE | SUB CODE | CODE DESCRIPTION |
|---|---|---|
| 53 | 48 | OFFGOING SPEED TEST, 4 TO N1 |
|  | 49 | OFFGOING SPEED TEST, 4 TO N3 |
|  | 58 | OFFGOING SPEED TEST, 5 TO N1 |
|  | 59 | OFFGOING SPEED TEST, 5 TO N3 |
|  | 68 | OFFGOING SPEED TEST, 6 TO N1 |
|  | 69 | OFFGOING SPEED TEST, 6 TO N4 |
|  | 78 | OFFGOING SPEED TEST, REVERSE TO N1 |
|  | 99 | OFFGOING SPEED TEST, N2 TO N3 OR N3 TO N2 |
|  | XY | OFFGOING SPEED TEST, X TO Y |
| 54 | 01 | ONCOMING RATIO TEST, LOW TO 1 |
|  | 07 | ONCOMING RATIO TEST, LOW TO REVERSE |
|  | 10 | ONCOMING RATIO TEST, 1 TO LOW |
|  | 12 | ONCOMING RATIO TEST, 1 TO 2 |
|  | 17 | ONCOMING RATIO TEST, 1 TO REVERSE |
|  | 21 | ONCOMING RATIO TEST, 2 TO 1 |
|  | 23 | ONCOMING RATIO TEST, 2 TO 3 |
|  | 24 | ONCOMING RATIO TEST, 2 TO 4 |
|  | 27 | ONCOMING RATIO TEST, 2 TO REVERSE |
|  | 32 | ONCOMING RATIO TEST, 3 TO 2 |
|  | 34 | ONCOMING RATIO TEST, 3 TO 4 |
|  | 35 | ONCOMING RATIO TEST, 3 TO 5 |
|  | 42 | ONCOMING RATIO TEST, 4 TO 2 |
|  | 43 | ONCOMING RATIO TEST, 4 TO 3 |
|  | 45 | ONCOMING RATIO TEST, 4 TO 5 |
|  | 46 | ONCOMING RATIO TEST, 4 TO 6 |
|  | 53 | ONCOMING RATIO TEST, 5 TO 3 |
|  | 54 | ONCOMING RATIO TEST, 5 TO 4 |
|  | 56 | ONCOMING RATIO TEST, 5 TO 6 |
|  | 64 | ONCOMING RATIO TEST, 6 TO 4 |
|  | 65 | ONCOMING RATIO TEST, 6 TO 5 |
|  | 70 | ONCOMING RATIO TEST, REV. TO LOW |
|  | 71 | ONCOMING RATIO TEST, REVERSE TO 1 |
|  | 72 | ONCOMING RATIO TEST, REVERSE TO 2 |
|  | 80 | ONCOMING RATIO TEST, N1 TO LOW |
|  | 81 | ONCOMING RATIO TEST, N1 TO 1 |
|  | 82 | ONCOMING RATIO TEST, N1 TO 2 |
|  | 83 | ONCOMING RATIO TEST, N1 TO 3 |

# Diagnostic Transmission Codes

| MAIN CODE | SUB CODE | CODE DESCRIPTION |
|---|---|---|
| 54 | 85 | ONCOMING RATIO TEST, N1 TO 5 |
| | 86 | ONCOMING RATIO TEST, N1 TO 6 |
| | 87 | ONCOMING RATIO TEST, N1 TO REVERSE |
| | 92 | ONCOMING RATIO TEST, N2 TO 2 |
| | 93 | ONCOMING RATIO TEST, N3 TO 3 |
| | 95 | ONCOMING RATIO TEST, N3 TO 5 |
| | 96 | ONCOMING RATIO TEST, N4 TO 6 |
| | XY | ONCOMING RATIO TEST, X TO Y |
| 55 | 07 | ONCOMING C3PS TEST, LOW TO REVERSE |
| | 17 | ONCOMING C3PS TEST, 1 TO REVERSE |
| | 27 | ONCOMING C3PS TEST, 2 TO REVERSE |
| | 87 | ONCOMING C3PS TEST, N1 TO REVERSE |
| | 97 | ONCOMING C3PS TEST, NVL TO REVERSE |
| | XY | ONCOMING C3PS TEST, X TO Y |
| 56 | 00 | LOW RANGE VERIFICATION TEST |
| | 11 | 1ST RANGE VERIFICATION TEST |
| | 22 | 2ND RANGE VERIFICATION TEST |
| | 33 | 3RD RANGE VERIFICATION TEST |
| | 44 | 4TH RANGE VERIFICATION TEST |
| | 55 | 5TH RANGE VERIFICATION TEST |
| | 66 | 6TH RANGE VERIFICATION TEST |
| | 77 | REVERSE RANGE VERIFICATION TEST |
| 57 | 11 | 1ST RANGE VERIFICATION C3PS TEST |
| | 22 | 2ND RANGE VERIFICATION C3PS TEST |
| | 44 | 4TH RANGE VERIFICATION C3PS TEST |
| | 66 | 6TH RANGE VERIFICATION C3PS TEST |
| | 88 | N1 RANGE VERIFICATION C3PS TEST |
| | 99 | N2 OR N4 RANGE VERIFICATION C3PS TEST |
| 61 | 00 | RETARDER OIL TEMPERATURE, HOT |
| 62 | 12 | RETARDER TEMP. SENSOR, FAILED LOW |
| | 23 | RETARDER TEMP. SENSOR, FAILED HIGH |
| | 32 | ENGINE COOLANT TEMP. SENSOR, FAILED LOW |
| | 33 | ENGINE COOLANT TEMP. SENSOR, FAILED HIGH |
| 63 | 00 | INPUT FUNCTION FAULT |
| | 26 | KICKDOWN INPUT, FAILED ON |
| | 40 | SERVICE BRAKE STATUS INPUT, FAILED ON |

# Diagnostic Transmission Codes

| MAIN CODE | SUB CODE | CODE DESCRIPTION |
|---|---|---|
| 63 | 41 | PUMP/PACK AND NEUTRAL GENERAL PURPOSE INPUT |
| | 47 | RELS INPUT, FAILED ON |
| 64 | 12 | RETARDER MODULATION SENSOR, FAILED LOW |
| | 23 | RETARDER MODULATION SENSOR, FAILED HIGH |
| 65 | 00 | ENGINE RATING TOO HIGH |
| | 11 | ENGINE NOT RESPONDING TO LRTP TORQUE REDUCTION |
| | 12 | ENGINE NOT RESPONDING TO DEFAULT TRANSMISSION TORQUE LIMIT |
| 66 | 00 | SERIAL COMMUNICATION INTERFACE FAULT |
| | 11 | S. C. I. ENGINE COOLANT SOURCE FAULT |
| | 22 | J1939 RETARDER REQUEST FAULT |
| | 33 | J1939 DRIVER DEMAND TORQUE FAULT |
| | 34 | ENGINE NOT RESPONDING TO J1939 SEM CONTROL |
| 69 | 27 | A-HIGH SWITCH INOPERATIVE IN ECU |
| | 28 | F-HIGH SWITCH INOPERATIVE IN ECU |
| | 29 | N & H-HIGH SWITCH INOPERATIVE IN ECU |
| | 33 | COMPUTER OPERATING PROPERLY TIMEOUT IN ECU |
| | 34 | ECU WRITE TIMEOUT |
| | 35 | ECU CHECKSUM TEST |
| | 36 | RAM SELF TEST IN ECU |
| | 39 | COMMUNICATION CHIP ADDRESSING ERROR |
| | 41 | I/O ASIC ADDRESSING TEST IN ECU |
| | 42 | SPI OUTPUT FAILURE |
| | 43 | SPI INPUT FAILURE |
| 70 | 12 | MINOR LOOP OVERRUN IN SOFTWARE |
| | 13 | ILLEGAL WRITE TO ADDRESS $0000 |
| | 14 | MAJOR LOOP OVERRUN IN SOFTWARE |

# Diagnostic Transmission Codes

| DIAGNOSTIC CODE | CODE DESCRIPTION |
| --- | --- |
| C1312 | RETARDER REQUEST SENSOR, FAILED LOW |
| C1313 | RETARDER REQUEST SENSOR, FAILED HIGH |
| P0122 | PEDAL POSITION SENSOR, LOW VOLTAGE |
| P0123 | PEDAL POSITION SENSOR, HIGH VOLTAGE |
| P0218 | TRANSMISSION FLUID OVER TEMPERATURE |
| P0602 | TCM NOT PROGRAMMED |
| P0610 | TCM VEHICLE OPTIONS (TRANSID) ERROR |
| P0613 | TCM PROCESSOR |
| P0614 | TORQUE CONTROL DATA MISMATCH—ECM/TCM |
| P0634 | TCM INTERNAL TEMPERATURE TOO HIGH |
| P063E | AUTO CONFIGURATION THROTTLE INPUT NOT PRESENT |
| P063F | AUTO CONFIGURATION ENGINE COOLANT TEMP INPUT NOT PRESENT |
| P0658 | ACTUATOR SUPPLY VOLTAGE 1 (HSD1), LOW |
| P0659 | ACTUATOR SUPPLY VOLTAGE 1 (HSD1), HIGH |
| P0701 | TRANSMISSION CONTROL SYSTEM PERFORMANCE |
| P0702 | TRANSMISSION CONTROL SYSTEM ELECTRICAL (TRANSID) |
| P0703 | BRAKE SWITCH CIRCUIT MALFUNCTION |
| P0708 | TRANSMISSION RANGE SENSOR, HIGH |
| P070C | TRANSMISSION FLUID LEVEL SENSOR, LOW |
| P070D | TRANSMISSION FLUID LEVEL SENSOR, HIGH |
| P0711 | TRANSMISSION FLUID TEMPERATURE SENSOR PERFORMANCE |
| P0712 | TRANSMISSION FLUID TEMPERATURE SENSOR, LOW |
| P0713 | TRANSMISSION FLUID TEMPERATURE SENSOR, HIGH |
| P0716 | TURBINE SPEED SENSOR PERFORMANCE |
| P0717 | TURBINE SPEED SENSOR, NO SIGNAL |
| P0719 | BRAKE SWITCH ABS, INPUT LOW |
| P071A | RELS INPUT, FAILED ON |
| P071D | GENERAL PURPOSE FAULT |
| P0721 | OUTPUT SPEED SENSOR PERFORMANCE |
| P0722 | OUTPUT SPEED SENSOR, NO SIGNAL |
| P0726 | ENGINE SPEED SENSOR PERFORMANCE |
| P0727 | ENGINE SPEED SENSOR, NO SIGNAL |

# Diagnostic Transmission Codes

| DIAGNOSTIC CODE | CODE DESCRIPTION |
| --- | --- |
| P0729 | INCORRECT 6TH GEAR RATIO |
| P0731 | INCORRECT 1ST GEAR RATIO |
| P0732 | INCORRECT 2ND GEAR RATIO |
| P0733 | INCORRECT 3RD GEAR RATIO |
| P0734 | INCORRECT 4TH GEAR RATIO |
| P0735 | INCORRECT 5TH GEAR RATIO |
| P0736 | INCORRECT REVERSE GEAR RATIO |
| P0741 | TORQUE CONVERTER CLUTCH SYSTEM, STUCK OFF |
| P0776 | PRESSURE CONTROL SOLENOID 2, STUCK OFF |
| P0777 | PRESSURE CONTROL SOLENOID 2, STUCK ON |
| P0796 | PRESSURE CONTROL SOLENOID 3, STUCK OFF |
| P0797 | PRESSURE CONTROL SOLENOID 3, STUCK ON |
| P0842 | TRANSMISSION PRESSURE SWITCH 1, LOW |
| P0843 | TRANSMISSION PRESSURE SWITCH 1, HIGH |
| P0880 | TCM POWER INPUT SIGNAL |
| P0881 | TCM POWER INPUT SIGNAL PERFORMANCE |
| P0882 | TCM POWER INPUT SIGNAL, LOW |
| P0883 | TCM POWER INPUT SIGNAL, HIGH |
| P0894 | TRANSMISSION COMPONENT SLIPPING |
| P0960 | PRESSURE CONTROL SOLENOID MAIN MOD CONTROL, OPEN |
| P0962 | PRESSURE CONTROL SOLENOID MAIN MOD CONTROL, LOW |
| P0963 | PRESSURE CONTROL SOLENOID MAIN MOD CONTROL, HIGH |
| P0964 | PRESSURE CONTROL SOLENOID 2 CONTROL, OPEN |
| P0966 | PRESSURE CONTROL SOLENOID 2 CONTROL, LOW |
| P0967 | PRESSURE CONTROL SOLENOID 2 CONTROL, HIGH |
| P0968 | PRESSURE CONTROL SOLENOID 3 CONTROL, OPEN |
| P0970 | PRESSURE CONTROL SOLENOID 3 CONTROL, LOW |
| P0971 | PRESSURE CONTROL SOLENOID 3 CONTROL, HIGH |
| P0973 | SHIFT SOLENOID 1 CONTROL, LOW |
| P0974 | SHIFT SOLENOID 1 CONTROL, HIGH |
| P0975 | SHIFT SOLENOID 2 CONTROL, OPEN |
| P0976 | SHIFT SOLENOID 2 CONTROL, LOW |

If it's not Allison, it's not Automatic.™

## Diagnostic Transmission Codes

| DIAGNOSTIC CODE | CODE DESCRIPTION |
|---|---|
| P0977 | SHIFT SOLENOID 2 CONTROL, HIGH |
| P0989 | RETARDER PRESSURE SENSOR, FAILED LOW |
| P0990 | RETARDER PRESSURE SENSOR, FAILED HIGH |
| P1739 | INCORRECT LOW GEAR RATIO |
| P1891 | THROTTLE POSITION SENSOR PWM SIGNAL, LOW |
| P1892 | THROTTLE POSITION SENSOR PWM SIGNAL, HIGH |
| P2184 | ENGINE COOLANT TEMPERATURE SENSOR, LOW |
| P2185 | ENGINE COOLANT TEMPERATURE SENSOR, HIGH |
| P2637 | TORQUE MANAGEMENT FEEDBACK SIGNAL (SEM) |
| P2641 | TORQUE MANAGEMENT FEEDBACK SIGNAL (LRTP) |
| P2670 | ACTUATOR SUPPLY VOLTAGE 2 (HSD2), LOW |
| P2671 | ACTUATOR SUPPLY VOLTAGE 2 (HSD2), HIGH |
| P2685 | ACTUATOR SUPPLY VOLTAGE 3 (HSD3), LOW |
| P2686 | ACTUATOR SUPPLY VOLTAGE 3 (HSD3), HIGH |
| P2714 | PRESSURE CONTROL SOLENOID 4, STUCK OFF |
| P2715 | PRESSURE CONTROL SOLENOID 4, STUCK ON |
| P2718 | PRESSURE CONTROL SOLENOID 4 CONTROL, OPEN |
| P2720 | PRESSURE CONTROL SOLENOID 4 CONTROL, LOW |
| P2721 | PRESSURE CONTROL SOLENOID 4 CONTROL, HIGH |
| P2723 | PRESSURE CONTROL SOLENOID 1, STUCK OFF |
| P2724 | PRESSURE CONTROL SOLENOID 1, STUCK ON |
| P2727 | PRESSURE CONTROL SOLENOID 1 CONTROL, OPEN |
| P2729 | PRESSURE CONTROL SOLENOID 1 CONTROL, LOW |
| P2730 | PRESSURE CONTROL SOLENOID 1 CONTROL, HIGH |
| P2736 | PRESSURE CONTROL SOLENOID 5 CONTROL, OPEN |
| P2738 | PRESSURE CONTROL SOLENOID 5 CONTROL, LOW |
| P2739 | PRESSURE CONTROL SOLENOID 5 CONTROL, HIGH |
| P2740 | RETARDER OIL TEMPERATURE, HOT |
| P2742 | RETARDER OIL TEMPERATURE SENSOR, LOW |
| P2743 | RETARDER OIL TEMPERATURE SENSOR, HIGH |
| P2761 | TCC PCS CONTROL, OPEN |
| P2763 | TCC PCS CONTROL, HIGH |
| P2764 | TCC PCS CONTROL, LOW |
| P278A | KICKDOWN INPUT, FAILED ON |
| P2793 | GEAR SHIFT DIRECTION |

## Diagnostic Transmission Codes

| DIAGNOSTIC CODE | CODE DESCRIPTION |
|---|---|
| P2808 | PRESSURE CONTROL SOLENOID 6, STUCK OFF |
| P2809 | PRESSURE CONTROL SOLENOID 6, STUCK ON |
| P2812 | PRESSURE CONTROL SOLENOID 6 CONTROL, OPEN |
| P2814 | PRESSURE CONTROL SOLENOID 6 CONTROL, LOW |
| P2815 | PRESSURE CONTROL SOLENOID 6 CONTROL, HIGH |
| U0001 | HIGH SPEED CAN BUS RESET COUNTER OVERRUN (IESCAN) |
| U0010 | CAN BUS RESET COUNTER OVERRUN |
| U0100 | LOST COMMUNICATION WITH ECM/PCM (J1587) |
| U0103 | LOST COMMUNICATION WITH GEAR SHIFT MODULE (SHIFT SELECTOR) 1 |
| U0115 | LOST COMMUNICATION WITH ECM |
| U0291 | LOST COMMUNICATION WITH GEAR SHIFT MODULE (SHIFT SELECTOR) 2 |
| U0304 | INCOMPATIBLE GEAR SHIFT MODULE 1 (SHIFT SELECTOR ID) |
| U0333 | INCOMPATIBLE GEAR SHIFT MODULE 2 (SHIFT SELECTOR ID) |
| U0404 | INVALID DATA RECEIVED FROM GEAR SHIFT MODULE (SHIFT SELECTOR) 1 |
| U0592 | INVALID DATA RECEIVED FROM GEAR SHIFT MODULE (SHIFT SELECTOR) 2 |