Allison Transmission

OPERATION
+ CODE MANUAL

5TH GENERATION

SHIFT SELECTOR

OIL LEVEL INFORMATION, DIAGNOSTIC CODES AND PROGNOSTIC FEATURES
FOR 3000/4000 SERIES™ AND TC10® ALLISON TRANSMISSIONS

Table of Contents

General Information

Control. Power. Information. The new 5th Generation Electronic Shift Selector from Allison puts it all at your fingertips. Literally. Getting started is easy and the selector's complete menu of prognostic and diagnostic tools minimize downtime and keep you on the job. Use this handy reference booklet for step-by-step instruction on how to get the most from your shift selector and of course, your Allison fully automatic 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, read diagnostic codes and prognostic information. This manual will help you understand shift selector readouts and enjoy long, trouble-free operation of your Allison Automatic.

Diagnostics

The Transmission Control Module (TCM) of your Allison Automatic monitors the transmission's electronic controls; and when a problem condition is detected, it:

- May restrict 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 TCM has signaled a diagnostic code.

NOTE: Displays apply only when using a 5th Gen TCM.

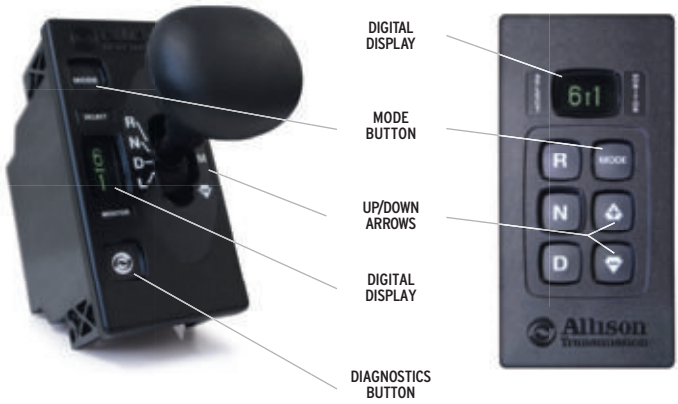
* *For some problems, diagnostic codes may be registered without the TCM activating the* **CHECK TRANS** *light. Your Allison Authorized Service Network should be consulted whenever there is a transmission-related concern. They have the equipment to check for diagnostic codes and to correct problems.*

Basic Operation

5th Generation Electronic Controls Shift Selectors

As the world leader in medium- and heavy-duty commercial transmissions, Allison Transmission continues its ongoing improvement initiative with the introduction of 5th Generation Electronic Controls Shift Selectors.

All 5th Generation Electronic Controls Shift Selectors feature easy-to-read graphic displays that show both text and symbols.



BUMP LEVER **PUSHBUTTON**

R - REVERSE N - NEUTRAL D - DRIVE

OEMs may supply shift selectors for some vehicles equipped with 5th Generation Electronic Controls. If your vehicle is not equipped with an Allison-supplied shift selector, contact your OEM.

Mode Button

Allison Automatics offer primary and secondary shift schedule modes to enhance performance or fuel economy. The vehicle always defaults to the primary mode [**MODE** is not shown on graphic display].
If equipped as such you can switch to the secondary mode by pushing the **MODE** button [**MODE** is shown on graphic display].

FUELSENSE®

Your vehicle may be equipped with FuelSense – Allison's next generation in fuel-savings technology. FuelSense is a set of unique packages of software and electronic controls that can potentially increase fuel economy by 20%. FuelSense icons will appear at start up if your vehicle utilizes a FuelSense package.

SECTION 1
WITH PROGNOSTICS + WITH OIL LEVEL SENSOR

Fluid Levels

The transmission fluid cools, lubricates and transmits hydraulic power, so it is important that 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.

Checking Fluid Levels

Use the following procedure to display oil level information.

To enter the oil level function:

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** arrows one time.

   For a *bump lever shift selector*, press the **DIAGNOSTICS** button one time.

3. The fluid level reading will be delayed until the following conditions are met.
   - Engine must be at idle.
   - Transmission is in **N (NEUTRAL)**.
   - Output speed must be zero.
   - Fluid temperature must be between 104F (40C) and 220F (104C).
   - Vehicle has been stationary for two minutes to allow the fluid to settle.

4. The shift selector displays the oil level data as follows:

- **CORRECT FLUID LEVEL** – The fluid is within the correct fluid level zone when OK is shown.
- **LOW FLUID LEVEL** – The display shows the number of quarts the transmission oil is low.
- **HIGH FLUID LEVEL** – The display shows the number of quarts the transmission oil is overfilled.

Delayed Fluid Level Check

If the fluid level check cannot be completed, one of the following Oil Level Display faults will be shown:

To exit the oil level function:

- For *pushbutton shift selector*, press **N (NEUTRAL)** button.
- For *bump lever shift selector*, press the **DIAGNOSTICS** button until you return to range display.

Prognostic Features

5th Generation Electronic Controls Shift Selectors display prognostics in text form to provide at-a-glance status of Oil Life, Filter Life and Transmission Health.

The **WRENCH ICON** will illuminate briefly after you turn the key to the run position on your Allison-equipped vehicle to indicate that prognostics are enabled. If the **WRENCH ICON** remains on or flashes, this indicates there is a service issue relating to clutch, filter or fluid life.

PUSHBUTTON

BUMP LEVER

Oil Life Monitor

The status of the oil life is displayed as a percentage **(OIL LIFE 100%)** until fluid is due for a change.

Filter Life Monitor

The status of filter life is displayed as **OIL FILTERS OK** and alerts when filters are due for a change with **REPLACE FILTERS**.

Transmission Health Monitor (not available for TC10)

The status of transmission health is displayed as **OK** or **LO**.

Accessing Prognostics

When you are alerted via the **WRENCH ICON** on the shift selector that service is due, you can check the status by toggling through the shift selector display as follows. *Be sure to park the vehicle on a level surface, shift to* **N (NEUTRAL)** *and apply the parking brake before accessing prognostics through the shift selector.*

Oil Life Monitor

For a *pushbutton shift selector*, simultaneously press the **UP** and **DOWN** arrows two times.

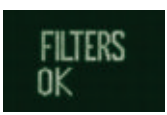
For a bump lever shift selector, press the DIAGNOSTICS button two times.

The percentage of the fluid life remaining is displayed. New fluid is shown as **OIL LIFE 100%.**

Filter Life Monitor

For a *pushbutton shift selector*, simultaneously press the **UP** and **DOWN** arrows three times.

For a *bump lever shift selector*, press the **DIAGNOSTICS** button three times.



Acceptable filter life status is shown as **FILTERS OK**, unacceptable filter life status is shown as **REPLACE FILTERS**.

Transmission Health Monitor

For a *pushbutton shift selector*, simultaneously press the **UP** and **DOWN** arrows four times.

For a bump lever shift selector, press the **DIAGNOSTICS** button four times.

When **TRANS HEALTH OK** is shown, clutch maintenance is not required. When **TRANS HEALTH LO** is displayed, clutch maintenance is required.

Resetting Prognostics

Oil Life Monitor

For either a *pushbutton* or *bump lever shift selector*, press and hold the **MODE** button for approximately 10 seconds while in Oil Life Monitor mode.

Or

For either a *pushbutton* or *bump lever shift selector*, perform the following shift sequence with the ignition on, but the engine off. Do not stop the sequence for more than three seconds once you have started.

N-D-N-D-N-R-N

Filter Life Monitor

For either a *pushbutton* or *bump lever shift selector*, press and hold the MODE button for approximately 10 seconds while in Filter Life Monitor mode.

Or

For either a *pushbutton* or *bump lever shift selector*, perform the following shift sequence with the ignition on, but the engine off. Do not stop the sequence for more than three seconds once you have started.

N-R-N-R-N-D-N

Transmission Health Monitor

This must be reset manually using Allison DOC® for PC diagnostic program after correcting a clutch system issue.

Exit Prognostics

For a *pushbutton shift selector*, press the **N (NEUTRAL)** range button.

For a *bump lever shift selector*, press the **DIAGNOSTICS** range button until back to range display.

Diagnostic Codes

To enter the diagnostic code function:

1. Bring the vehicle to a complete stop.
   Apply the parking brake.
2. For a *pushbutton shift selector*, simultaneously press the **UP** and **DOWN** arrows five times (four times for TC10).

   For a *bump lever shift selector*, press the **DIAGNOSTICS** button five times.

3. Up to five codes may be recorded in memory.
4. Each code remains in the display until the **MODE** button is pushed, then the next code is shown. Active codes are shown first, newest to oldest, followed by any inactive codes still in the memory.

ACTIVE CODES:

INACTIVE CODES:

For a detailed list of Diagnostic Transmission Codes for 5th Generation Electronic Controls Shift Selectors, see pages 17 through 21.

To exit the diagnostic code function:

Any of the following methods may be used.

1. For a *pushbutton shift selector*, press the **N (NEUTRAL)** range button.

2. For a *bump lever shift selector*, press the **DIAGNOSTICS** range button until back to range display.

3. Wait approximately 10 minutes and the system will automatically return to normal operating mode.
4. Turn off the vehicle engine ignition switch.

Drive the vehicle and check for code recurrence. If codes continue to recur, bring the vehicle to an Allison Authorized Service Network to diagnose and repair the problem causing the codes.

SECTION 2
WITH PROGNOSTICS + WITHOUT OIL LEVEL SENSOR

Prognostic Features

5th Generation Electronic Controls Shift Selectors display prognostics in text form to provide at-a-glance status of Oil Life, Filter Life and Transmission Health.

The **WRENCH ICON** will illuminate briefly after you turn the key to the run position on your Allison-equipped vehicle to indicate that prognostics are enabled. If the **WRENCH ICON** remains on or flashes, this indicates there is a service issue relating to clutch, filter or fluid life.

PUSHBUTTON

BUMP LEVER

Oil Life Monitor

The status of the oil life is displayed as a percentage **(OIL LIFE 100%)** until fluid is due for a change.

Filter Life Monitor

The status of filter life is displayed as **OIL FILTERS OK** and alerts when filters are due for a change with **REPLACE FILTERS**.

Transmission Health Monitor (not available for TC10)

The status of transmission health is displayed as **HIGH** to **LO**.

Accessing Prognostics

When you are alerted via the **WRENCH ICON** on the shift selector that service is due, you can check the status by toggling through the shift selector display as follows. *Be sure to park the vehicle on a level surface, shift to **N (NEUTRAL)** and apply the parking brake before accessing prognostics through the shift selector.*

Oil Life Monitor

For a *pushbutton shift selector*, simultaneously press the **UP** and **DOWN** arrows one time.

For a bump lever shift selector, press the DIAGNOSTICS button one time.

The percentage of the fluid life remaining is displayed. New fluid is shown as **OIL LIFE 100%.**

Filter Life Monitor

For a *pushbutton shift selector*, simultaneously press the **UP** and **DOWN** arrows two times.

For a *bump lever shift selector*, press the **DIAGNOSTICS** button two times.

Acceptable filter life status is shown as **FILTERS OK**, unacceptable filter life status is shown as **REPLACE FILTERS**.

Transmission Health Monitor

For a *pushbutton shift selector*, simultaneously press the **UP** and **DOWN** arrows three times.

For a bump lever shift selector, press the **DIAGNOSTICS** button three times.

When **TRANS HEALTH OK** is shown, clutch maintenance is not required. When **TRANS HEALTH LO** is displayed, clutch maintenance is required.

Resetting Prognostics

Oil Life Monitor

For either a *pushbutton* or *bump lever shift selector*, press and hold the **MODE** button for approximately 10 seconds while in Oil Life Monitor mode.

Or

For either a *pushbutton* or *bump lever shift selector*, perform the following shift sequence with the ignition on, but the engine off. Do not stop the sequence for more than three seconds once you have started.

N-D-N-D-N-R-N

Filter Life Monitor

For either a *pushbutton* or *bump lever shift selector*, press and hold the MODE button for approximately 10 seconds while in Filter Life Monitor mode.

Or

For either a *pushbutton* or *bump lever shift selector*, perform the following shift sequence with the ignition on, but the engine off. Do not stop the sequence for more than three seconds once you have started.

N-R-N-R-N-D-N

Transmission Health Monitor

This must be reset manually using Allison DOC® for PC diagnostic program after correcting a clutch system issue.

Exit Prognostics

For a *pushbutton shift selector*, press the **N (NEUTRAL)** range button.

For a *bump lever shift selector*, press the **DIAGNOSTICS** range button until back to range display.

Diagnostic Codes

To enter the diagnostic code function:

1. Bring the vehicle to a complete stop. Apply the parking brake.
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2. For a *bump lever shift selector*, press the **DIAGNOSTICS** range button until back to range display.
3. Wait approximately 10 minutes and the system will automatically return to normal operating mode.
4. Turn off the vehicle engine ignition switch.

Drive the vehicle and check for code recurrence. If codes continue to recur, bring the vehicle to an Allison Authorized Service Network to diagnose and repair the problem causing the codes.

SECTION 3
WITHOUT PROGNOSTICS + WITH OIL LEVEL SENSOR

Fluid Levels

The transmission fluid cools, lubricates and transmits hydraulic power, so it is important that 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.

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Use the following procedure to display oil level information.

To enter the oil level function:

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** arrows one time.

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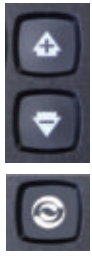

3. The fluid level reading will be delayed until the following conditions are met.
   - Engine must be at idle.
   - Transmission is in **N (NEUTRAL)**.
   - Output speed must be zero.
   - Fluid temperature must be between 104F (40C) and 220F (104C).
   - Vehicle has been stationary for two minutes to allow the fluid to settle.

4. The shift selector displays the oil level data as follows:

- **CORRECT FLUID LEVEL** – The fluid is within the correct fluid level zone when OK is shown.
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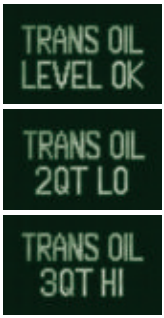

Delayed Fluid Level Check

If the fluid level check cannot be completed, one of the following Oil Level Display faults will be shown:

To exit the oil level function:

- For *pushbutton shift selector*, press **N (NEUTRAL)** button one time.
- For *bump lever shift selector*, press the **DIAGNOSTICS** button until back to range display.

Diagnostic Codes

To enter the diagnostic code function:

1. Bring the vehicle to a complete stop.
   Apply the parking brake.
2. For a *pushbutton shift selector*, simultaneously press the **UP** and **DOWN** arrows two times.

   For a *bump lever shift selector*, press the **DIAGNOSTICS** button two times.
3. Up to five codes may be recorded in memory.
4. Each code remains in the display until the **MODE** button is pushed, then the next code is shown. Active codes are shown first, newest to oldest, followed by any inactive codes still in the memory.

ACTIVE CODES:

INACTIVE CODES:

For a detailed list of Diagnostic Transmission Codes for 5th Generation Electronic Controls Shift Selectors, see pages 17 through 21.

To exit the diagnostic code function:

Any of the following methods may be used.

1. For a *pushbutton shift selector*, press the **N (NEUTRAL)** range button.
2. For a *bump lever shift selector*, press the **DIAGNOSTICS** range button until back to range display.
3. Wait approximately 10 minutes and the system will automatically return to normal operating mode.
4. Turn off the vehicle engine ignition switch.

Drive the vehicle and check for code recurrence. If codes continue to recur, bring the vehicle to an Allison Authorized Service Network to diagnose and repair the problem causing the codes.

SECTION 4
WITHOUT PROGNOSTICS + WITHOUT OIL LEVEL SENSOR

Diagnostic Codes

To enter the diagnostic code function:

1. Bring the vehicle to a complete stop.
   Apply the parking brake.
2. For a *pushbutton shift selector*, simultaneously press the **UP** and **DOWN** arrows one time.

   For a *bump lever shift selector*, press the **DIAGNOSTICS** button one time.

3. Up to five codes may be recorded in memory.
4. Each code remains in the display until the **MODE** button is pushed, then the next code is shown. Active codes are shown first, newest to oldest, followed by any inactive codes still in the memory.

ACTIVE CODES:

INACTIVE CODES:

For a detailed list of Diagnostic Transmission Codes for 5th Generation Electronic Controls Shift Selectors, see pages 17 through 21.

To exit the diagnostic code function:

Any of the following methods may be used.

1. For a *pushbutton shift selector*, press the **N (NEUTRAL)** range button.
2. For a *bump lever shift selector*, press the **DIAGNOSTICS** range button until back to range display.
3. Wait approximately 10 minutes and the system will automatically return to normal operating mode.
4. Turn off the vehicle engine ignition switch.

Drive the vehicle and check for code recurrence. If codes continue to recur, bring the vehicle to an Allison Authorized Service Network to diagnose and repair the problem causing the codes.

Diagnostic Transmission Codes

DIAGNOSTIC CODE	CODE DESCRIPTION
P0122	PEDAL POSITION SENSOR CIRCUIT LOW VOLTAGE
P0123	PEDAL POSITION SENSOR CIRCUIT HIGH VOLTAGE
P0218	TRANSMISSION FLUID OVER TEMPERATURE CONDITION
P0562	SYSTEM VOLTAGE LOW
P057C	BRAKE PEDAL POSITION SENSOR LOW
P057D	BRAKE PEDAL POSITION SENSOR HIGH
P0602	TCM NOT PROGRAMMED
P0603	INTERNAL CONTROL MODULE KEEP ALIVE MEMORY ERROR
P0604	CONTROL MODULE RANDOM ACCESS MEMORY (RAM)
P0607	CONTROL MODULE PERFORMANCE
P060C	MAIN PROCESSOR MONITOR FAULT
P0614	TORQUE CONTROL DATA MISMATCH - ECM/TCM
P0634	TCM INTERNAL TEMPERATURE TOO HIGH
P0642	SENSOR REFERENCE VOLTAGE "A" CIRCUIT FAULT
P0652	SENSOR REFERENCE VOLTAGE "B" CIRCUIT FAULT
P0657	ACTUATOR SUPPLY CIRCUIT VOLTAGE 1 OPEN (HSD 1)
P0658	ACTUATOR SUPPLY CIRCUIT VOLTAGE 1 LOW (HSD 1)
P0659	ACTUATOR SUPPLY CIRCUIT VOLTAGE 1 HIGH (HSD 1)
P0701	TRANSMISSION CONTROL SYSTEM PERFORMANCE
P0703	BRAKE SWITCH CIRCUIT
P0708	TRANSMISSION RANGE SENSOR CIRCUIT HIGH
P070C	TRANSMISSION FLUID LEVEL SENSOR CIRCUIT LOW
P070D	TRANSMISSION FLUID LEVEL SENSOR CIRCUIT HIGH
P0712	TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT LOW
P0713	TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT HIGH
P0715	TURBINE SHAFT SPEED SENSOR CIRCUIT
P0716	TURBINE SHAFT SPEED SENSOR CIRCUIT PERFORMANCE
P0717	TURBINE SHAFT SPEED SENSOR CIRCUIT NO SIGNAL
P071A	NEUTRAL AT STOP INPUT FAILED ON
P071D	GENERAL PURPOSE INPUT FAULT
P0720	OUTPUT SHAFT SPEED SENSOR CIRCUIT
P0721	OUTPUT SHAFT SPEED SENSOR CIRCUIT PERFORMANCE
P0722	OUTPUT SHAFT SPEED SENSOR CIRCUIT NO SIGNAL
P0725	ENGINE SPEED SENSOR CIRCUIT
P0726	ENGINE SPEED SENSOR CIRCUIT PERFORMANCE
P0727	ENGINE SPEED SENSOR CIRCUIT NO SIGNAL
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 RATIO
P0741	TORQUE CONVERTER CLUTCH (TCC) SYSTEM STUCK OFF
P0752	SHIFT SOLENOID 1 VALVE PERFORMANCE - STUCK ON
P076F	INCORRECT 7TH GEAR RATIO
P0776	PRESSURE CONTROL SOLENOID (PCS) 2 STUCK OFF
P0777	PRESSURE CONTROL SOLENOID (PCS) 2 STUCK ON
P077F	INCORRECT REVERSE 2 RATIO

DIAGNOSTIC CODE	CODE DESCRIPTION
P0796	PRESSURE CONTROL SOLENOID (PCS) 3 STUCK OFF
P0797	PRESSURE CONTROL SOLENOID (PCS) 3 STUCK ON
P07D9	INCORRECT 8TH GEAR RATIO
P07F6	INCORRECT 9TH GEAR RATIO
P07F7	INCORRECT 10TH GEAR RATIO
P081B	CRANK ENABLE CIRCUIT HIGH
P0837	FOUR WHEEL DRIVE (4WD) SWITCH CIRCUIT RANGE/PERFORMANCE
P083C	TRANSMISSION FLUID PRESSURE SWITCH 6 CIRCUIT LOW
P083C	TRANSMISSION FLUID PRESSURE SWITCH 6 CIRCUIT LOW
P083D	TRANSMISSION FLUID PRESSURE SWITCH 6 CIRCUIT HIGH
P083D	TRANSMISSION FLUID PRESSURE SWITCH 6 CIRCUIT HIGH
P0842	TRANSMISSION FLUID PRESSURE SWITCH 1 CIRCUIT LOW
P0843	TRANSMISSION FLUID PRESSURE SWITCH 1 CIRCUIT HIGH
P0847	TRANSMISSION FLUID PRESSURE SWITCH 2 CIRCUIT LOW
P0848	TRANSMISSION FLUID PRESSURE SWITCH 2 CIRCUIT HIGH
P084C	TRANSMISSION FLUID PRESSURE SWITCH TCC CIRCUIT LOW
P084D	TRANSMISSION FLUID PRESSURE SWITCH TCC CIRCUIT HIGH
P0872	TRANSMISSION FLUID PRESSURE SWITCH 3 CIRCUIT LOW
P0873	TRANSMISSION FLUID PRESSURE SWITCH 3 CIRCUIT HIGH
P0877	TRANSMISSION FLUID PRESSURE SWITCH 4 CIRCUIT LOW
P0878	TRANSMISSION FLUID PRESSURE SWITCH 4 CIRCUIT HIGH
P0880	TCM POWER INPUT SIGNAL
P0881	TCM POWER INPUT SIGNAL PERFORMANCE
P0882	TCM POWER INPUT SIGNAL LOW
P0883	TCM POWER INPUT SIGNAL HIGH
P088A	TRANSMISSION FILTER MAINTENANCE ALERT
P088B	TRANSMISSION FILTER MAINTENANCE REQUIRED
P0894	UNEXPECTED MECHANICAL GEAR DISENGAGEMENT
P0897	TRANSMISSION FLUID DETERIORATED
P0960	MAIN PRESSURE MODULATION SOLENOID CONTROL CIRCUIT OPEN
P0961	MAIN PRESSURE MODULATION SOLENOID SYSTEM PERFORMANCE
P0962	MAIN PRESSURE MODULATION SOLENOID CONTROL CIRCUIT LOW
P0963	MAIN PRESSURE MODULATION SOLENOID CONTROL CIRCUIT HIGH
P0964	PRESSURE CONTROL SOLENOID (PCS) 2 CONTROL CIRCUIT OPEN
P0966	PRESSURE CONTROL SOLENOID (PCS) 2 CONTROL CIRCUIT LOW
P0967	PRESSURE CONTROL SOLENOID (PCS) 2 CONTROL CIRCUIT HIGH
P0968	PRESSURE CONTROL SOLENOID (PCS) 3 CONTROL CIRCUIT OPEN
P0970	PRESSURE CONTROL SOLENOID (PCS) 3 CONTROL CIRCUIT LOW
P0971	PRESSURE CONTROL SOLENOID (PCS) 3 CONTROL CIRCUIT HIGH
P0973	SHIFT SOLENOID 1 CONTROL CIRCUIT LOW
P0974	SHIFT SOLENOID 1 CONTROL CIRCUIT HIGH
P0976	SHIFT SOLENOID 2 CONTROL CIRCUIT LOW
P0977	SHIFT SOLENOID 2 CONTROL CIRCUIT HIGH
P0979	SHIFT SOLENOID 3 CONTROL CIRCUIT LOW
P097A	SHIFT SOLENOID 1 CONTROL CIRCUIT OPEN
P097B	SHIFT SOLENOID 2 CONTROL CIRCUIT OPEN
P097C	SHIFT SOLENOID 3 CONTROL CIRCUIT OPEN
P0980	SHIFT SOLENOID 3 CONTROL CIRCUIT HIGH
P0989	RETARDER PRESSURE SENSOR CIRCUIT LOW
P0990	RETARDER PRESSURE SENSOR CIRCUIT HIGH
P0994	TRANSMISSION FLUID PRESSURE SWITCH 5 CIRCUIT LOW

DIAGNOSTIC CODE	CODE DESCRIPTION
P0994	TRANSMISSION FLUID PRESSURE SWITCH 5 CIRCUIT LOW
P0995	TRANSMISSION FLUID PRESSURE SWITCH 5 CIRCUIT HIGH
P0995	TRANSMISSION FLUID PRESSURE SWITCH 5 CIRCUIT HIGH
P0A0B	HIGH VOLTAGE INTERLOCK LOOP 1 INVALID
P0A2F	DRIVE MOTOR OVER TEMPERATURE
P0A44	DRIVE MOTOR OVERSPEED
P0A7D	ENERGY STORAGE SYSTEM OVER DISCHARGE
P0A90	DRIVE MOTOR INVALID DIRECTION
P0AA6	ISOLATION STATUS INVALID
P0B37	SERVICE DISCONNECT INVALID
P0C19	DRIVE MOTOR TORQUE DELIVERED PERFORMANCE
P0C26	ELECTRIC PUMP POWER DRAW TOO HIGH
P0C2C	ELECTRIC PUMP SPEED INCORRECT
P0C30	ENERGY STORAGE SYSTEM OVER CHARGE
P0C76	HIGH VOLTAGE BUS DISCHARGE TIME TOO LONG
P0DA8	HYBRID BATTERY VOLTAGE/DRIVE MOTOR INVERTER VOLTAGE CORRELATION
P1739	INCORRECT LOW GEAR RATIO
P1790	GEAR SHIFT MODULE 1 CALIBRATION INVALID
P1791	GEAR SHIFT MODULE 2 CALIBRATION INVALID
P1891	THROTTLE POSITION SENSOR PWM SIGNAL LOW
P1892	THROTTLE POSITION SENSOR PWM SIGNAL HIGH
P1901	COUNTERSHAFT SPEED SENSOR CIRCUIT
P1902	COUNTERSHAFT SPEED SENSOR PERFORMANCE
P1903	COUNTERSHAFT SPEED SENSOR NO ACTIVITY
P1907	SHIFT FORK STUCK MOVING TO REVERSE POSITION
P1922	TRANSMISSION FLUID PRESSURE SWITCH A CIRCUIT LOW
P1923	TRANSMISSION FLUID PRESSURE SWITCH A CIRCUIT HIGH
P1927	TRANSMISSION FLUID PRESSURE SWITCH B CIRCUIT LOW
P1928	TRANSMISSION FLUID PRESSURE SWITCH B CIRCUIT HIGH
P192C	TRANSMISSION FLUID PRESSURE SWITCH C CIRCUIT LOW
P192D	TRANSMISSION FLUID PRESSURE SWITCH C CIRCUIT HIGH
P1A01	TRANSMISSION CONTROL SYSTEM 2 PERFORMANCE
P1A0C	TRANSMISSION FLUID LEVEL SENSOR 2 CIRCUIT LOW
P1A0D	TRANSMISSION FLUID LEVEL SENSOR 2 CIRCUIT HIGH
P1A11	DC/DC CONVERTER “A” FAULT ACTIVE
P1A12	DC/DC CONVERTER “B” FAULT ACTIVE
P1A13	ELECTRIC PUMP FAULT ACTIVE
P1A14	ENERGY STORAGE SYSTEM FAULT ACTIVE
P1A15	INVERTER FAULT ACTIVE
P1A20	HIGH VOLTAGE INTERLOCK LOOP 2 INVALID
P1A30	INVERTER OPERATING MODE NOT CORRELATED
P1A31	ENERGY STORAGE SYSTEM OPERATING MODE NOT CORRELATED
P1A32	DC/DC CONVERTER “A” OPERATING MODE NOT CORRELATED
P1A33	DC/DC CONVERTER “B” OPERATING MODE NOT CORRELATED
P1A34	ELECTRIC PUMP OPERATING MODE NOT CORRELATED
P1A3F	INVERTER ISOLATION FAULT
P1A40	HIGH VOLTAGE BUS POWER BALANCE
P2184	ENGINE COOLANT TEMPERATURE SENSOR 2 CIRCUIT LOW
P2185	ENGINE COOLANT TEMPERATURE SENSOR 2 CIRCUIT HIGH
P2637	TORQUE MANAGEMENT FEEDBACK SIGNAL A

DIAGNOSTIC CODE	CODE DESCRIPTION
P2641	TORQUE MANAGEMENT FEEDBACK SIGNAL B
P2669	ACTUATOR SUPPLY CIRCUIT VOLTAGE 2 OPEN (HSD 2)
P2670	ACTUATOR SUPPLY CIRCUIT VOLTAGE 2 LOW (HSD 2)
P2671	ACTUATOR SUPPLY CIRCUIT VOLTAGE 2 HIGH (HSD 2)
P2684	ACTUATOR SUPPLY CIRCUIT VOLTAGE 3 OPEN (HSD 3)
P2685	ACTUATOR SUPPLY CIRCUIT VOLTAGE 3 LOW (HSD 3)
P2686	ACTUATOR SUPPLY CIRCUIT VOLTAGE 3 HIGH (HSD 3)
P26E7	ACTUATOR SUPPLY CIRCUIT VOLTAGE 4 OPEN (HSD 4)
P26E8	ACTUATOR SUPPLY CIRCUIT VOLTAGE 4 LOW (HSD 4)
P26E9	ACTUATOR SUPPLY CIRCUIT VOLTAGE 4 HIGH (HSD 4)
P2714	PRESSURE CONTROL SOLENOID (PCS) 4 STUCK OFF
P2715	PRESSURE CONTROL SOLENOID (PCS) 4 STUCK ON
P2718	PRESSURE CONTROL SOLENOID (PCS) 4 CONTROL CIRCUIT OPEN
P2720	PRESSURE CONTROL SOLENOID (PCS) 4 CONTROL CIRCUIT LOW
P2721	PRESSURE CONTROL SOLENOID (PCS) 4 CONTROL CIRCUIT HIGH
P2723	PRESSURE CONTROL SOLENOID (PCS) 1 STUCK OFF
P2724	PRESSURE CONTROL SOLENOID (PCS) 1 STUCK ON
P2727	PRESSURE CONTROL SOLENOID (PCS) 1 CONTROL CIRCUIT OPEN
P2729	PRESSURE CONTROL SOLENOID (PCS) 1 CONTROL CIRCUIT LOW
P2730	PRESSURE CONTROL SOLENOID (PCS) 1 CONTROL CIRCUIT HIGH
P2732	PRESSURE CONTROL SOLENOID (PCS) 5 STUCK OFF
P2733	PRESSURE CONTROL SOLENOID (PCS) 5 STUCK ON
P2736	PRESSURE CONTROL SOLENOID (PCS) 5 CONTROL CIRCUIT OPEN
P2738	PRESSURE CONTROL SOLENOID (PCS) 5 CONTROL CIRCUIT LOW
P2739	PRESSURE CONTROL SOLENOID (PCS) 5 CONTROL CIRCUIT HIGH
P273F	RETARDER OIL TEMPERATURE SENSOR OVER TEMPERATURE CONDITION
P2742	RETARDER OIL TEMPERATURE SENSOR CIRCUIT LOW
P2743	RETARDER OIL TEMPERATURE SENSOR CIRCUIT HIGH
P274B	TRANSMISSION FLUID TEMPERATURE SENSOR "C" CIRCUIT RANGE/PERFORMANCE
P274C	TRANSMISSION FLUID TEMPERATURE SENSOR "C" CIRCUIT LOW
P274D	TRANSMISSION FLUID TEMPERATURE SENSOR "C" CIRCUIT HIGH
P274F	TRANSMISSION FLUID SENSOR "C" OVER TEMPERATURE CONDITION
P2761	TORQUE CONVERTER CLUTCH (TCC) PRESSURE CONTROL SOLENOID (PCS) CONTROL CIRCUIT/OPEN
P2763	TORQUE CONVERTER CLUTCH (TCC) PRESSURE CONTROL SOLENOID (PCS) CONTROL CIRCUIT HIGH
P2764	TORQUE CONVERTER CLUTCH (TCC) PRESSURE CONTROL SOLENOID (PCS) CONTROL CIRCUIT LOW
P2789	TRANSMISSION CLUTCH LIFE EXPIRED (CLUTCH ADAPTIVE LEARNING AT LIMIT)
P2793	GEAR SHIFT DIRECTION CIRCUIT
P2808	PRESSURE CONTROL SOLENOID (PCS) 6 STUCK OFF
P2809	PRESSURE CONTROL SOLENOID (PCS) 6 STUCK ON
P2812	PRESSURE CONTROL SOLENOID (PCS) 6 CONTROL CIRCUIT OPEN
P2814	PRESSURE CONTROL SOLENOID (PCS) 6 CONTROL CIRCUIT LOW
P2815	PRESSURE CONTROL SOLENOID (PCS) 6 CONTROL CIRCUIT HIGH
P2817	PRESSURE CONTROL SOLENOID (PCS) 7 STUCK OFF
P2818	PRESSURE CONTROL SOLENOID (PCS) 7 STUCK ON
P281B	PRESSURE CONTROL SOLENOID (PCS) 7 CONTROL CIRCUIT OPEN

DIAGNOSTIC CODE	CODE DESCRIPTION
P281D	PRESSURE CONTROL SOLENOID (PCS) 7 CONTROL CIRCUIT LOW
P281E	PRESSURE CONTROL SOLENOID (PCS) 7 CONTROL CIRCUIT HIGH
P2824	PRESSURE CONTROL SOLENOID (PCS) 8 CONTROL CIRCUIT OPEN
P2826	PRESSURE CONTROL SOLENOID (PCS) 8 CONTROL CIRCUIT LOW
P2827	PRESSURE CONTROL SOLENOID (PCS) 8 CONTROL CIRCUIT HIGH
P2832	SHIFT FORK POSITION CIRCUIT PERFORMANCE
P2833	SHIFT FORK POSITION CIRCUIT LOW
P2834	SHIFT FORK POSITION CIRCUIT HIGH
P2849	SHIFT FORK STUCK MOVING TO FORWARD POSITION
P284D	SHIFT FORK UNREQUESTED MOVEMENT
P2879	ENGINE/HYBRID CLUTCH SYSTEM SLIPPING
P287A	ENGINE CLUTCH STUCK ON
C1312	RETARDER REQUEST SENSOR CIRCUIT LOW
C1313	RETARDER REQUEST SENSOR CIRCUIT HIGH
U0073	CAN COMMUNICATION BUS 1 OFF
U0074	CAN COMMUNICATION BUS 2 OFF
U0100	LOST COMMUNICATIONS WITH ECM A
U0103	LOST COMMUNICATION WITH GEAR SHIFT MODULE 1
U0110	LOST COMMUNICATION WITH DRIVE MOTOR CONTROL MODULE
U0111	LOST COMMUNICATION WITH ENERGY STORAGE SYSTEM CONTROL MODULE
U0287	LOST COMMUNICATION WITH ELECTRIC PUMP
U0291	LOST COMMUNICATION WITH GEAR SHIFT MODULE 2
U0298	LOST COMMUNICATION WITH DC/DC CONVERTER “A”
U0299	LOST COMMUNICATION WITH DC/DC CONVERTER “B”
U0304	GEAR SHIFT MODULE 1 INCOMPATIBLE
U0333	GEAR SHIFT MODULE 2 INCOMPATIBLE
U0404	GEAR SHIFT MODULE 1 INVALID DATA
U0411	INVERTER INVALID DATA
U0412	ENERGY STORAGE SYSTEM INVALID DATA
U0588	ELECTRIC PUMP INVALID DATA
U0592	GEAR SHIFT MODULE 2 INVALID DATA
U0599	DC/DC CONVERTER “A” INVALID DATA
U059A	DC/DC CONVERTER “B” INVALID DATA

Information contained in this brochure is designed to give you an overview of the Oil Level Sensor, Diagnostics and Prognostic Features on your Allison Automatic and is not intended to replace your Operator's Manual.

To order an Operator's Manual, go to **allisontransmission.com** or call toll free **888-666-5799**.

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