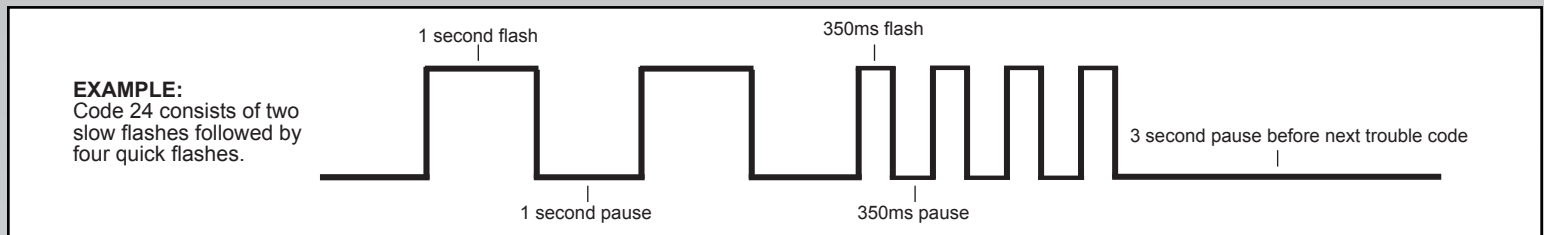


# DIAGNOSTIC TROUBLE CODES (DTC's)

Diagnostic trouble codes (DTC's) can be read using the PCS diagnostic software or the check transmission light installed on the dash.

If a DTC is active and the engine is running, the check transmission light will be on solid to indicate there is an active code. When the ignition is turned on, but the engine is not running, the light will flash a pattern so the DTC can be read. The flashing will indicate both active and stored codes.

The codes consist of two numbers. The first number is flashed at one second intervals, then a one second pause and the second number is flashed at 350ms. There is a three second pause in between trouble codes.



CODE	DESCRIPTION	FAIL CONDITIONS	ACTION TAKEN	ACTIVE TO STORED CONDITIONS
<b>1</b> U0001	CAN Com. Lost	<i>Code 1 is the same as code 23. It is reported as code 1 or code U0001 on some software versions. See Code 23 below for a full description.</i>		
<b>21</b>	Throttle Position High	Throttle Position High Throttle position voltage has been above 4.9 Volts for more than 1 second.	Max line pressure. Shift points fixed at 35% throttle.	Throttle position below 4.9 volts for more than 1 second.
<b>22</b>	Throttle Position Low	TPS voltage is less than 0.20 volts for more than 1 second.	Max line pressure. Shift points fixed at 35% throttle.	Throttle position above 0.20 volts for more than 1 second.
<b>23</b> OBDII: U0001 J1939: 522731	CAN Com. Lost	No CAN communications for greater than 5 seconds. <b>Note: Reported as code 1 or U0001 in some software versions.</b>	Max line pressure. Shift points fixed at 35% TPS. Inhibit 4th/TCC.	Valid CAN message received.
<b>24</b> OBDII: P0722 J1939: 522741	Output Speed Sensor	No Code 21, 22, 23. Sets when not in Park or Neutral, Engine RPM greater than 3000, Input shaft speed greater than 10%, Output speed less than 200. All conditions met for 3 seconds.	Calculate output shaft speed from input shaft speed and commanded gear, Max line pressure.	Key Cycle
<b>28</b> OBDII: P1810 J1939: 522751	Lever Position Error	Sets when TCM receives an illegal combination from lever position sensor for 2 seconds.	Max pressure. Assume Overdrive 4 is selected. Inhibit 4th/TCC.	Key Cycle
<b>37</b> OBDII: P0719 J1939: 522740	Brake Switch Stuck Off	Sets when Brake is not pressed, Vehicle speed is below 5 MPH for greater than 6 seconds, then Vehicle speed is greater than 20 MPH for greater than 6 seconds, for a total of 7 times.	Inhibit TCC	Key Cycle or when Brake Pedal is pressed
<b>38</b> OBDII: P0724 J1939: 522743	Brake Switch Stuck On	Sets when Brake is pressed, Vehicle speed is below 5 MPH for greater than 6 seconds, then Vehicle speed is greater than 20 MPH for greater than 6 seconds, for a total of 7 times.	Inhibit TCC	Key Cycle or When Brake Pedal is pressed
<b>39</b> OBDII: P0741 J1939: 522744	TCC Stuck OFF	TCC slip is greater than 65 RPM for 3 seconds when TCC is commanded on in 2nd or 3rd.	Inhibit TCC/4th gear	Key Cycle
<b>51</b> OBDII: P0601 J1939: 522736	TCM	Sets when Internal memory writes/reads fail, COP stops operating or processor executes an Illegal Opcode.	2nd Gear, Max line pressure, Inhibit TCC	Key Cycle
<b>52</b> OBDII: P0560 J1939: 522733	System Voltage High Long	Sets when system voltage is greater than 16 volts for 30 minutes.	2nd Gear, Max line pressure, Inhibit TCC	Key Cycle or when system voltage drops below 15V.
<b>53</b> OBDII: P0561 J1939: 522734	System Voltage High	Sets when system voltage is greater than 19.5 volts for 5 seconds.	2nd Gear, Max line pressure, Inhibit TCC	Key Cycle or when system voltage drops below 18V.
<b>58</b> OBDII: P0712 J1939: 522737	Trans Temp High TFT Circuit Low	Sets when Transmission Temperature Is above 151°C (304°F).	Inhibit 4th/TCC	When trans temp drops below 148°C for 5 seconds.
<b>59</b> OBDII: P0713 J1939: 522738	Trans Temp Low TFT Circuit High	Transmission Temperature Is Below - 37°C (-34°F) for 1 second.	Inhibit 4th/TCC	When trans temp goes above -35°C for 5 seconds.
<b>68</b> OBDII: P1870 J1939: 522753	Component Slipping/TCC/4th Clutch Slipping	No DTC 23, 28, 71, 74. Throttle Position is greater than 25%, Engine speed is 200 rpm or more than input speed for 6 seconds when in 4th gear and TCC engaged.	Max line pressure, Inhibit 4th	Key Cycle

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<b>69</b> OBDII: P0742 J1939: 522745	TCC Stuck On	No DTC 21, 22, 23, 71, 74 Sets when TCC slip is between -25 and 25 rpm, TCC solenoid is commanded off, TPS is greater than 25% for 4 seconds.	TCC Commanded on, Max Line Pressure	Key Cycle
<b>71</b>	Engine Speed Circuit Low	Sets when Engine speed is less than 50 RPM, transmission range is R, D4, D3, D1 for 2 seconds.	Inhibit 4th and TCC	When Engine RPM goes above 300 RPM
<b>72</b> OBDII: P0723 J1939: 522742	Intermittent Output Shaft Speed	No DTC 21, 22, 23, 28, 71, 74. Sets when Engine RPM is greater than 300, range is D4, D3, D2, or D1, Throttle position is greater than 25% and Output shaft speed changes more than 500 rpm in one measurement period.	Max line pressure. Calculate TOSS from TISS and commanded Gear.	Key Cycle
<b>73</b> OBDII: P0748 J1939: 522746	Pressure Control Circuit	Force motor current is more than 0.16 Amps different than commanded current for 2 seconds.	Max line pressure.	Key Cycle
<b>74</b> OBDII: P0717 J1939: 522739	Input Speed Sensor Circuit	No DTC 28. Sets when Range is not park or neutral, engine speed greater than 300 RPM, Output speed greater than 200 RPM, Input speed less than 50 RPM, for 2 seconds.	Max line pressure. Inhibit 4th/ TCC.	When Input Speed goes above 75 RPM for 2 seconds.
<b>75</b> OBDII: P0562 J1939: 522735	System Voltage Low	Sets when the ignition is on, voltage is less than the following conditions: -40°F (-40°C) = 7.3V 194°F (90°C) = 10.3V 302°F (150°C) = 11.7V Engine Speed is greater than 300 rpm for 4 seconds.	2nd Gear with Max pressure. Inhibit TCC.	Clears when system voltage is greater than the following conditions for 4 seconds:- 40°F (-40°C) =7.3V 194°F (90°C) =10.3V 302°F (150°C) = 11.7V
<b>79</b> OBDII: P0128 J1939: 522732	Transmission Fluid Overtemp	No DTC 58 sets when transmission fluid temperature is greater than 270°F (132°C), for 5 minutes.	None.	When trans temp falls below 266°F (130°C) for 5 seconds.
<b>81</b> OBDII: P0758 J1939: 522750	Shift Solenoid B (SSB) Circuit Fault	Battery Voltage above 10V TCM detects an open circuit, short to battery, short to ground, or over-current condition on the shift solenoid B circuit for 2 seconds.	2nd or 3rd gears only. Max Line Pressure.	When Fault condition removed for 2 seconds.
<b>82</b> OBDII: P0753 J1939: 522748	Shift Solenoid A (SSA) Circuit Fault	Battery Voltage above 10V TCM detects an open circuit, short to battery, short to ground, or over-current condition on the shift solenoid A circuit for 2 seconds.	2nd and 3rd gears only or 1st and 4th gear only. Max line pressure.	When Fault condition removed for 2 seconds.
<b>83</b> OBDII: P1860 J1939: 522752	TCC Solenoid Circuit Fault	Battery Voltage above 10V. TCM detects an open circuit, short to battery, short to ground, or over-current condition on the TCC solenoid circuit.	Inhibit TCC. Inhibit 4th when in Hot mode.	When Fault condition removed for 2 seconds.
<b>84</b>	Accelerator Pedal Performance	Measured throttle voltage difference exceeds allowable tolerance.	Assume 0% throttle.	Key Cycle
<b>85</b> OBDII: P1871 J1939: 522754	Undefined Ratio Error	No DTC 21, 22, 23, 24, 28, 71, 72 sets when RPM is greater than 300 RPM, TPS is greater than 25%, VSS is greater than 7 MPH, ratio falls out of range for 6 seconds.	2nd gear with Max line pressure. Inhibit TCC.	Key Cycle
<b>86</b> OBDII: P0756 J1939: 522749	Low Ratio Error (Shift Solenoid B (SSB) Stuck On)	No DTC 21, 22, 23, 24, 28, 71, 72, 74, 85 sets when RPM is greater than 300 RPM, TPS is greater than 25%, VSS is greater than 7 MPH, transmission ratio matches 4th when 1st is commanded or 3rd gear when 2nd gear is commanded, for 6 seconds.	2nd gear with Max line pressure. Inhibit TCC.	Key Cycle
<b>87</b> OBDII: P0751 J1939: 522747	High Ratio Error (Shift Solenoid B (SSB) Stuck Off)	No DTC 21, 22, 23, 24, 28, 71, 72, 74, 85 sets when RPM is greater than 300 RPM, TPS is greater than 25%, VSS is greater than 7 MPH, transmission ratio matches 1st when 4th is commanded or 2nd gear when 3rd gear is commanded, for 6 seconds.	2nd gear with Max line pressure. Inhibit TCC.	Key Cycle
<b>91</b>	Non-Idle Inch	TPS greater than 15% or RPM greater than 800 RPM during inching.	Transmission locked	Key Cycle
<b>92</b>	Movement Not Commanded	Output shaft movement detected when not commanded.	Transmission locked	Key Cycle
<b>93</b>	Inching Past Target	Output shaft movement detected past desired stopping point.	Transmission locked	Key Cycle
<b>94</b>	Forward Clutch Solenoid Circuit Fault	Forward clutch current is more than 0.16 Amps different than commanded current for 2 seconds.	Trans commanded to neutral; however an electrical failure of the clutch solenoid could result in unpredictable vehicle movement.	Key Cycle

## DIAGNOSTIC TROUBLE CODES (DTC's)

CODE	DESCRIPTION	FAIL CONDITIONS	ACTION TAKEN	ACTIVE TO STORED CONDITIONS
<b>95</b>	Reverse Clutch Solenoid Circuit Fault	Reverse clutch current is more than 0.16 Amps different than commanded current for 2 seconds.	Trans commanded to neutral; however an electrical failure of the clutch solenoid could result in unpredictable vehicle movement.	Key Cycle
<b>98</b>	Anti-collision System Fault	No communication with anti-collision module or anti-collision DTC.	Disable anti-collision system	Valid communication received or anti-collision fault cleared.