Rev. 11/10/21

329058

'05-'14 Chevrolet 24x LS2/LS3 Drive by Cable w/4L60E

This harness is designed for engine swap applications and therefore some modifications may be required in some applications. It is designed for use with 2005-2014 Chevrolet LS2/LS3 Gen IV Engines using a LS1 intake manifold (drive by cable T/B only) and EV6 injectors. It is also designed for use with a 4L60E automatic transmission.

Installation of this wiring harness should be carried out by a qualified technician or person with automotive wiring and electrical background/experience. As this is a "universal" harness, **technical information in regards to a specific application is not available for this product.**

The harness is equipped with GM Delphi OE connectors/terminals and includes all the wiring required to connect vehicle sensors, fuel injection system and transmission (where required).

When working with sensitive electronics such as a PCM, take care when connecting/disconnecting the battery, avoid any electrical shorts and only use a volt/ohm meter for testing circuits.

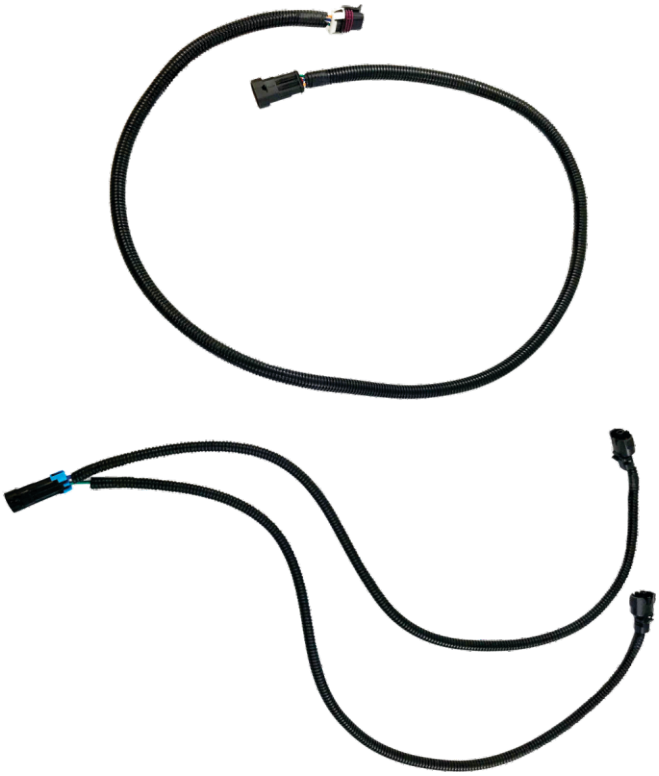
Notes regarding installation:
1) The VATS system will need to be removed from your PCM otherwise the engine will not start.
2) This harness is not equipped for emissions system equipment such as EGR, etc. PCM programming may be required to avoid malfunction codes.
3) A 2-position brake switch must be used. Closed circuit 12V when brakes off, and open circuit when brakes on. This is opposite from a standard brake switch. This is CRITICAL to the correct operation of the TCC.
4) This harness utilizes two pre-cat oxygen sensors (one per bank).
5) This harness includes enough wire to mount the PCM under dash.
6) The harness is divided by a grommet into two sections. Underhood (engine and related) and underdash (fuses, ignition, DLC etc.)

Installation:
1) Unpackage and lay out the harness to review and familiarize yourself with all the connections. Ensure you have all the correct sensors.
2) Pick a PCM mounting location which will be within the reach of the harness PCM connection.
3) Cut a and debur a 2" hole in the firewall where the harness will pass and the grommet will fit.
4) Install the harness through the hole taking care to route away from exhaust, moving parts, suspension and sharp edges.
5) Check that there is enough wire to reach all sensors and PCM without stretching.
6) Ensure all ground wires are connected securely to clean ground points. (battery to chassis, chassis to engine, engine to body etc.)
7) Route the VSS wire (if applicable) down towards the transmission keeping it away from ignition system and wires.
8) Route the battery and crank sensor connections behind to the rear of the P/S cylinder head and under the header to their appropriate connection.
9) Route the PCM and fuse block connections under the dash. (leave the PCM disconnected from the harness)

Under Hood

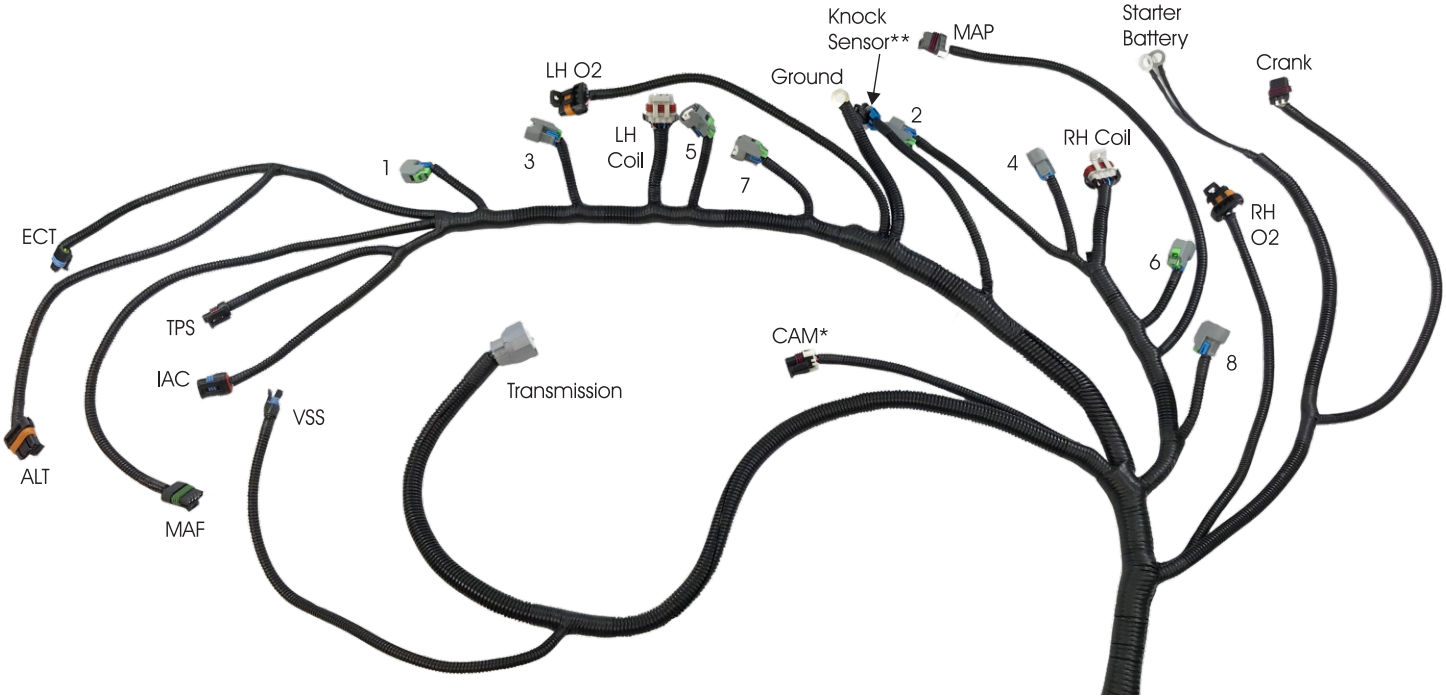
1) Connect the two (ground) small ring terminals to the engine block/cylinder head.
2) Connect wires as shown.
3) Wiring is designed to take the OE routing along the intake manifold side of each valve cover. D/S has IAC TPS & MAP
4) Route the VSS and transmission connectors to the transmission and connect accordingly.

*Kit includes CAM sensor extension harness



** Kit includes dual knock sensor conversion harness
Uses GEN III Single Wire Knock Sensors on side of block

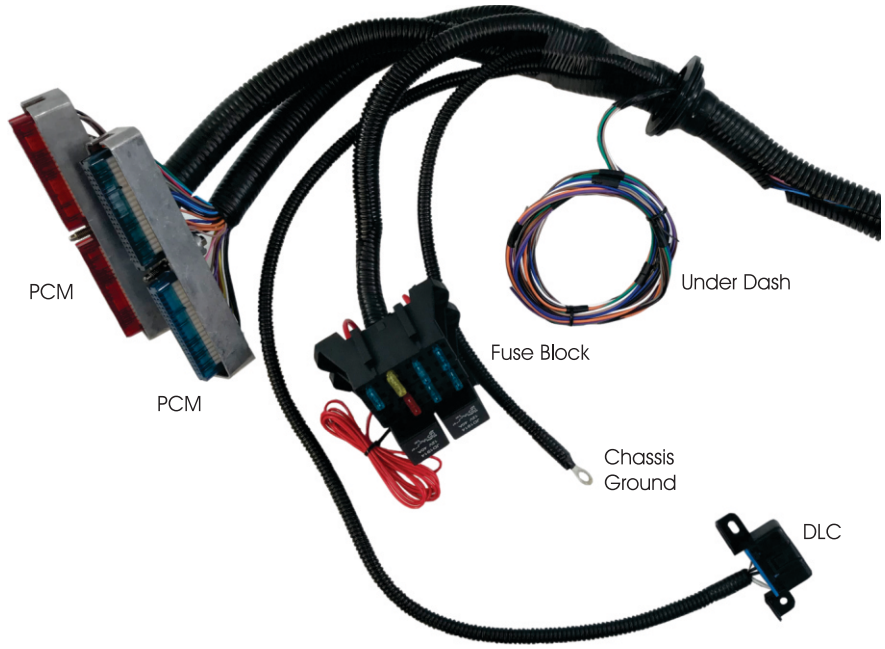
Connector	Color
#1 Fuel Injector	Pink/Black
#2 Fuel Injector	Pink/Dark Green
#3 Fuel Injector	Pink/Tan
#4 Fuel Injector	Pink/Light Blue
#5 Fuel Injector	Pink/White
#6 Fuel Injector	Pink/Yellow
#7 Fuel Injector	Pink/Red
#8 Fuel Injector	Pink/Dark Blue
Left Coil Bank	Black/Red/Dark Green/Brown
	Light Blue/Purple/Pink
Right Coil Bank	Black/Red/Dark Green/Brown
	Light Blue/Purple/Pink
Left O2	Tan/Purple/Black/Pink
VSS	Green/Purple
Alternator	Red
MAF 5-Wire	Yellow/Black/Pink/Purple/Tan
ECT	Black/Yellow (Gray Loop-Water Temp)
TPS	Gray/Black/Yellow
IAC	Light Green/Dark Green/Light Blue/Red
Knock Sensor	Dark Blue/Light Blue
MAP	Orange/Light Green/Gray
Cam Sensor	Black/Pink/Red (Tan Loop-Oil Pressure)
Right O2	Tan/Purple/Black/Pink
Transmission	Light Green/Yellow/Red/Light Blue
	Pink/Yellow/Black/Pink/Red/Dark Blue
	White/Tan/Brown
Crank Sensor	Dark Blue/Yellow/Light Blue
Battery/Starter (2)	Large ring terminals
Ground	Small ring terminal



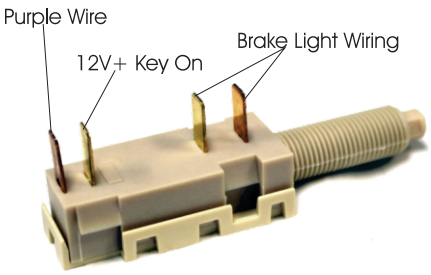
Under Dash

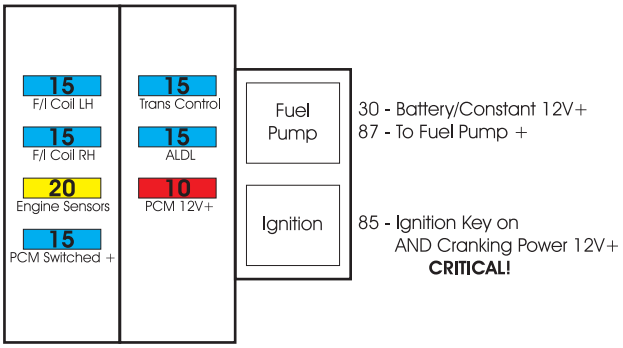
1) Disconnect battery (if connected)
2) With PCM unplugged, connect wires as shown.
3) Tape or seal any unused wire to prevent any shorts.
4) With the ignition off, connect the PCM taking care not to bend any pins.
5) Reconnect battery with the ignition off.

Circuit	From	To	Color
	PCM	9-WIRE LOOP	
DTC Light Ground	PIN 46 RED	MIL Light to 12V	Brown
Speedometer (Opt)	PIN 50 RED	Speedometer Module	Black
Tachometer (Opt)	PIN 10 RED	Tachometer	White
Electric Fan 1 Ground (Opt)	PIN 42 BLUE	Ground Fan Relay Trigger 1 (-)	Dark Green
Electric Fan 2 Ground (Opt)	PIN 33 RED	Ground Fan Relay Trigger 2 (-)	Dark Blue
Park Neutral (Opt)	PIN 34 BLUE	Ground when in Park/Neutral	Orange
Brake Signal	PIN 33 BLUE	12V Terminal (brake pedal up)	Purple
	UNDERHOOD	9-WIRE LOOP	
Water Temperature (Opt)	ECT PLUG LOOP*	Water Temperature (98-02 F-Body)	Gray
Oil Pressure (Opt)	CAM PLUG LOOP*	Oil Pressure (98-02 F-Body)	Tan
	*Loop inside loom		
Chassis Ring Terminals		Chassis Ground	Multiple Black
Ignition (Relay)		12V key on and during cranking	Red



2-Position Brake Switch





Glossary	Description
PCM	Powertrain Control Module
TPS	Throttle Position Sensor
IAC	Idle Air Control
EGR	Exhaust Gas Recirculation
ECT	Engine Coolant Temperature
IAT	Intake Air Temperature
MAP	Manifold Absolute Pressure
MAF	Mass Air Flow
O2	Oxygen Sensor
VAT	Vehicle Anti-Theft
CCP	Charcoal Cannister Purghe
DLC	Data Link Connector
TCC	Torque Converter Clutch
VSS	Vehicle Speed Sensor

Item	GM Part Numbers
PCM	#9354896 or #12200411
MAP	#13212460
IAC	#17113391
ECT	#15326388
ECT (F-Body)	AC Delco #12551708
Oil Pressure (F-Body)	#12562267
Knock Sensor*	#10456603
Ignition Coil	#12558948
O2 Sensor Flat	#25312184
O2 Sensor Square	#25161131
TPS	#17123852
MAF 5-Pin	#25168491
Cam Sensor	#12568983
Crank Sensor	#12560228

*#10456603 is a Gen III LS Style knock sensor and must be used with DBC T/B

Note: Wire colors used are subject to change, but Pin #, circuit and function will not.

Pin	Wire Color	Circuit No.	Function	
1	BLACK	451	Ground	Ground
2	BROWN	418	TCC Solenoid - Output - PWM	Round Transmission Connector
3	–			
4	–			
5	–			
6	RED	1228	Pressure Control Solenoid Valve High Control (Sol.A)	Round Transmission Connector
7	–			
8	LT BLUE	1229	Pressure Control Solenoid Valve Low Control (Sol.A)	Round Transmission Connector
9	GREEN	465	Fuel Pump Relay Control [Primary]	Fuse Box - F/P Relay Trigger
10	WHITE	121	Engine Speed Signal	To 9-Wire Loop
11	–			
12	–			
13	–			
14	–			
15	RED	225	Generator Turn ON Signal	Alternator Plug
16	–			
17	–			
18	–			
19	–			
20	GREEN	822	VSS Low Signal	VSS Plug
21	PURPLE	821	VSS High Signal	VSS Plug
22	–	1230	Transmission Input Speed Sensor (TIS) Signal (4L80E Only)	See Optional Wiring Diagram
23	–	1231	Transmission Input Speed Sensor (TIS) Reference Low (4L80E Only)	See Optional Wiring Diagram
24	YELLOW	417	Throttle Position Sensor Signal	TPS Sensor Plug
25	TAN	472	IAT Sensor Signal	IAT Sensor Plug (3-Wire MAF)
26	PURPLE	2121	Ignition Coil 1 Control	LH Ignition Coil Plug
27	RED	2127	Ignition Coil 7 Control	LH Ignition Coil Plug
28	LT BLUE	2126	Ignition Coil 6 Control	RH Ignition Coil Plug
29	GREEN	2124	Ignition Coil 4 Control	RH Ignition Coil Plug
30	–			
31	YELLOW	492	MAF Sensor Signal	MAF Sensor Plug
32	LT GREEN	432	MAP Sensor Signal	MAP Sensor Plug
33	DK BLUE	473	High Speed Cooling Fan Relay Control	To 9-Wire Loop
34	–			
35	–			
36	–			
37	–			
38	–			
39	RED	631	12 Volt Reference Camshaft Position Sensor	CAM Sensor Plug
40	BLACK	451	Ground	Ground
41	–			
42	TAN	422	TCC Solenoid Valve Control	Round Transmission Connector
43	–			
44	–			
45	–			
46	BROWN	419	MIL Control (CHECK ENGINE LIGHT)	To 9-Wire Loop
47	YELLOW	1223	2 - 3 Shift Solenoid Valve Control	Round Transmission Connector
48	LT GREEN	1222	1 - 2 Shift Solenoid Valve Control	Round Transmission Connector
49	–			
50	BLACK	817	Vehicle Speed Output Circuit 4K	To 9-Wire Loop
51	YELLOW	1227	Transmission Fluid Temperature Sensor Signal	Round Transmission Connector
52	–			
53	–			
54	–			
55	–			
56	–			
57	PURPLE	719	Low Reference IAT	IAT Sensor Plug (3-Wire MAF)
58	–			
59	–			
60	BROWN	2129	Ignition Control Low Reference (1,3,5,7)	LH Ignition Coil Plug
61	BROWN	2130	Ignition Control Low Reference (2,4,6,8)	RH Ignition Coil Plug
62	–			
63	PINK	1224	Transmission Fluid Pressure Switch Signal A	Round Transmission Connector
64	–			
65	–			
66	PURPLE	2128	Ignition Coil 8 Control	RH Ignition Coil Plug
67	RED	2122	Ignition Coil 2 Control	RH Ignition Coil Plug
68	GREEN	2125	Ignition Coil 5 Control	LH Ignition Coil Plug
69	LT BLUE	2123	Ignition Coil 3 Control	LH Ignition Coil Plug
70	–			
71	–			
72	–			
73	–			
74	–			
75	–			
76	GREEN	1749	IAC Coil B High Control	IAC Sensor Plug
77	LT GREEN	444	IAC Coil B Low Control	IAC Sensor Plug
78	LT BLUE	1748	IAC Coil A Low Control	IAC Sensor Plug
79	RED	1747	IAC Coil A High Control	IAC Sensor Plug
80	–			

Note: Wire colors used are subject to change, but Pin #, circuit and function will not.

Pin	Wire Color	Circuit No.	Function	
1	BLACK	451	Ground	Ground
2	LT BLUE	1867	12 Volt Reference (Crankshaft Postion Sensor)	Crank Sensor Plug
3	TAN	1746	Fuel Injector 3 Control	#3 Injector Plug
4	GREEN	1745	Fuel Injector 2 Control	#2 Injector Plug
5	–			
6	–			
7	–			
8	GRAY	596	5 Volt Reference (Throttle Position Sensor)	TPS Sensor Plug
9	–			
10	–			
11	LT BLUE	1876	Knock Sensor [2] Signal	Knock Sensor Plug
12	DK BLUE	1869	Crankshaft Postion Sensor Signal	Crank Sensor Plug
13	–			
14	–			
15	–			
16	–			
17	DK BLUE	1225	Transmission Fluid Pressure Switch Signal B	Round Transmission Connector
18	RED	1226	Transmission Fluid Pressure Switch Signal C	Round Transmission Connector
19	PINK	439	Ignition 1 Voltage	L/R O2,L/R Coils,1-8 Inj,MAF,etc.
20	ORANGE	340	Battery Positive Voltage	"FUSE 1" Large Red Wire Ring
21	YELLOW	1868	Sensor Low Reference (Crankshaft Postion Sensor)	Crank Sensor Plug
22	–			
23	–			
24	–			
25	–			
26	TAN	1667	HO2 Sensor Low Signal [Bank 2 Sensor 1]	RH O2 Sensor Plug
27	–			
28	–			
29	TAN	1653	HO2 Sensor Low Signal [Bank 1 Sensor 1]	LH O2 Sensor Plug
30	–			
31	–			
32	–			
33	PURPLE	420	TCC Brake Switch Signal	To 9-Wire Loop
34	ORANGE	434	Neutral Safety Switch Signal	PRND P Input - To 9-Wire Loop
35	–			
36	BLACK	1744	Fuel Injector 1 Control	#1 Injector Plug
37	YELLOW	846	Fuel Injector 6 Control	#6 Injector Plug
38	–			
39	–			
40	BLACK	451	Ground	Ground
41	–			
42	GREEN	335	Low Speed Cooling Fan Relay Control	To 9-Wire Loop
43	RED	877	Fuel Injector 7 Control	#7 Injector Plug
44	LT BLUE	844	Fuel Injector 4 Control	#4 Injector Plug
45	–			
46	–			
47	–			
48	GRAY	416	5 Volt Reference (MAP Sensor)	MAP Sensor Plug
49	–			
50	–			
51	DK BLUE	496	Knock Sensor [1] Signal	Knock Sensor Plug
52	–			
53	BLACK	407	Sensor Low Reference (Transmission Temperature Sensor)	Round Transmission Connector
54	ORANGE	407	Sensor Low Reference (MAP Sensor Ground)	MAP Sensor Plug
55	–			
56	–			
57	ORANGE	340	Battery Positive Voltage	Rear of Fuse Box
58	TAN	1049	ECM/PCM/VCM Class 2 Serial Data (OBDII)	ALDL Connector
59	–			
60	BLACK	452	Sensor Low Reference (Throttle Position Sensor)	TPS Sensor Plug
61	PINK	632	Sensor Low Reference (Camshaft Position Sensor)	CAM Sensor Plug
62	–			
63	–			
64	–			
65	–			
66	PURPLE	1666	HO2 Sensor High Signal [Bank 2 Sensor 1]	RH O2 Sensor Plug
67	–			
68	–			
69	PURPLE	1665	HO2 Sensor High Signal [Bank 1 Sensor 1]	LH O2 Sensor Plug
70	–			
71	–			
72	–			
73	BLACK	633	Camshaft Position Sensor Signal	CAM Sensor Plug
74	YELLOW	410	Engine Coolant Temperature Sensor Signal	ECT Sensor Plug
75	–			
76	WHITE	845	Fuel Injector 5 Control	#5 Injector Plug
77	DK BLUE	878	Fuel Injector 8 Control	#8 Injector Plug
78	–			
79	WHITE	687	3-2 Shift Solenoid Control	Round Transmission Connector
80	BLACK	407	Sensor Low Reference (Engine Coolant Temperature)	ECT Sensor Plug

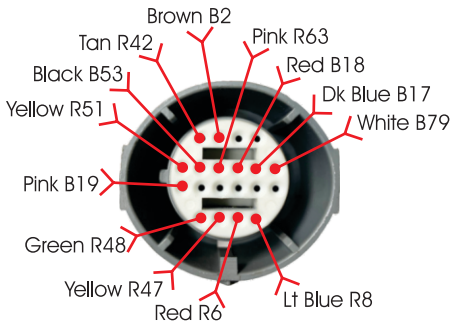
4L60E to 4L80E Wiring Conversion

The following instructions can be used to convert our #329058 or #329092 to work with a 4L80E transmission.

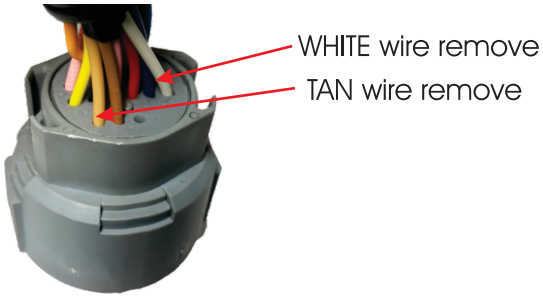
There will be pin changes at the transmission plug and at the PCM connectors.

1) Remove the cover over bottom of the pins on the 4L60E transmission plug. There is a small plastic tab holding each pin in place, this tab must be lifted, then push the pin over and out the back of the connector. Use the same process at the PCM. You will need to **REMOVE** 2 wires, and **MOVE** 1 wire.

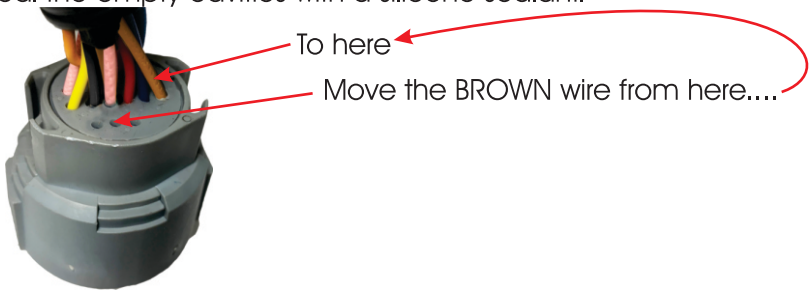
4L60E Wiring



2) **REMOVE** the WHITE wire and the TAN wire, in locations shown below.



3) **MOVE** the BROWN wire to the location where the white wire was. (the one removed in step 2)
4) Seal the empty cavities with a silicone sealant.



The round gray plug is now ready to connect to a 4L80E transmission. The 4L80E transmission has two speed sensors vs. one on the 4L60E. You will now have two "extra" wires. (TAN & WHITE) These will be used for the 4L80E's INPUT speed sensor.

5) Attach a speed sensor pigtail to the WHITE and TAN wires removed in step 2 above. Position is not important as the sensor is not polarity sensitive. The existing speed sensor wires from the 4L60E (PURPLE and GREEN wires) will hook to the speed sensor directly above the round gray trans connector. The new speed sensor plug (WHITE and TAN wires) will hook to the INPUT speed sensor, located above the shifter shaft on the side of the 4L80E. This completes the wiring at the transmission end.

6) At the PCM connectors, you will need to move the WHITE and TAN wires for the input speed sensor. The WHITE wire is in the C1 (BLUE) Connector PIN #79. Remove this pin, and MOVE it to C2 (RED) Connector PIN #22. The TAN wire is in the C2 (RED) Connector PIN #42. Remove this pin, and MOVE it to the C2 (RED) Connector PIN #23.

The PCM will need to be programmed for the 4L80E. This can be done by a HP Tuners dealer for example.