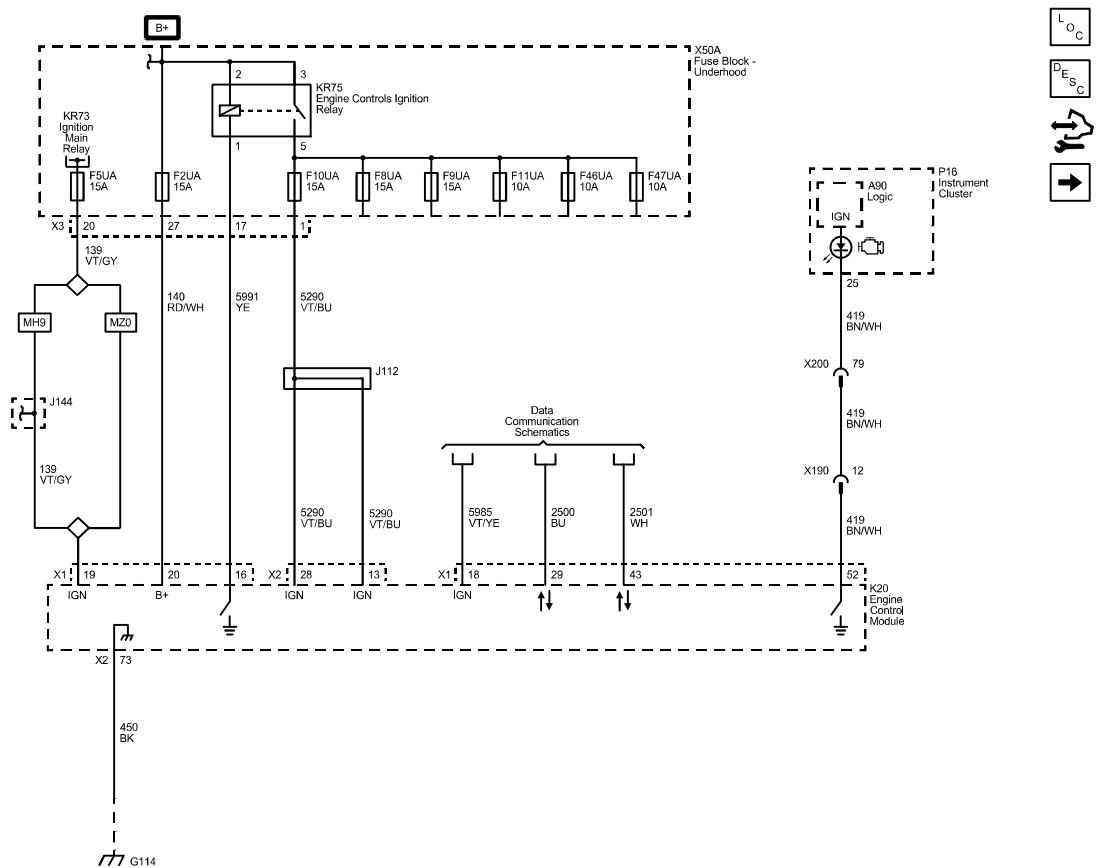
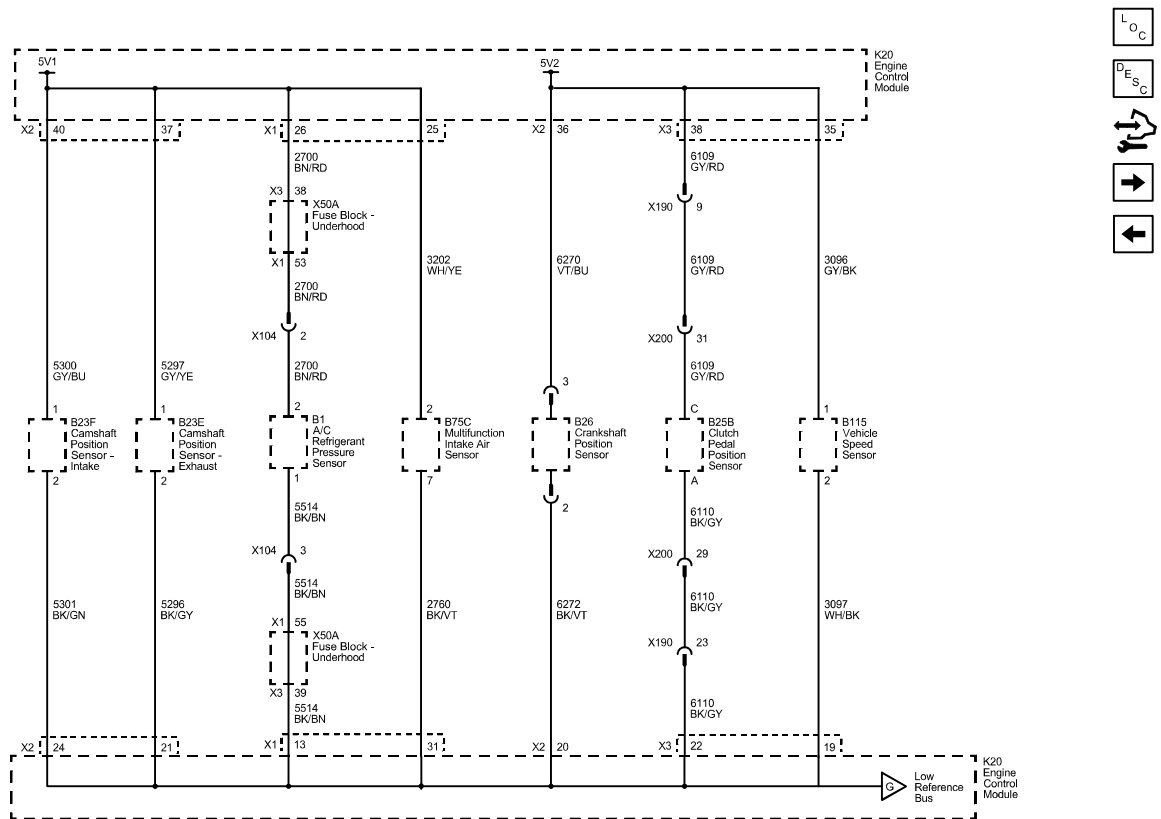


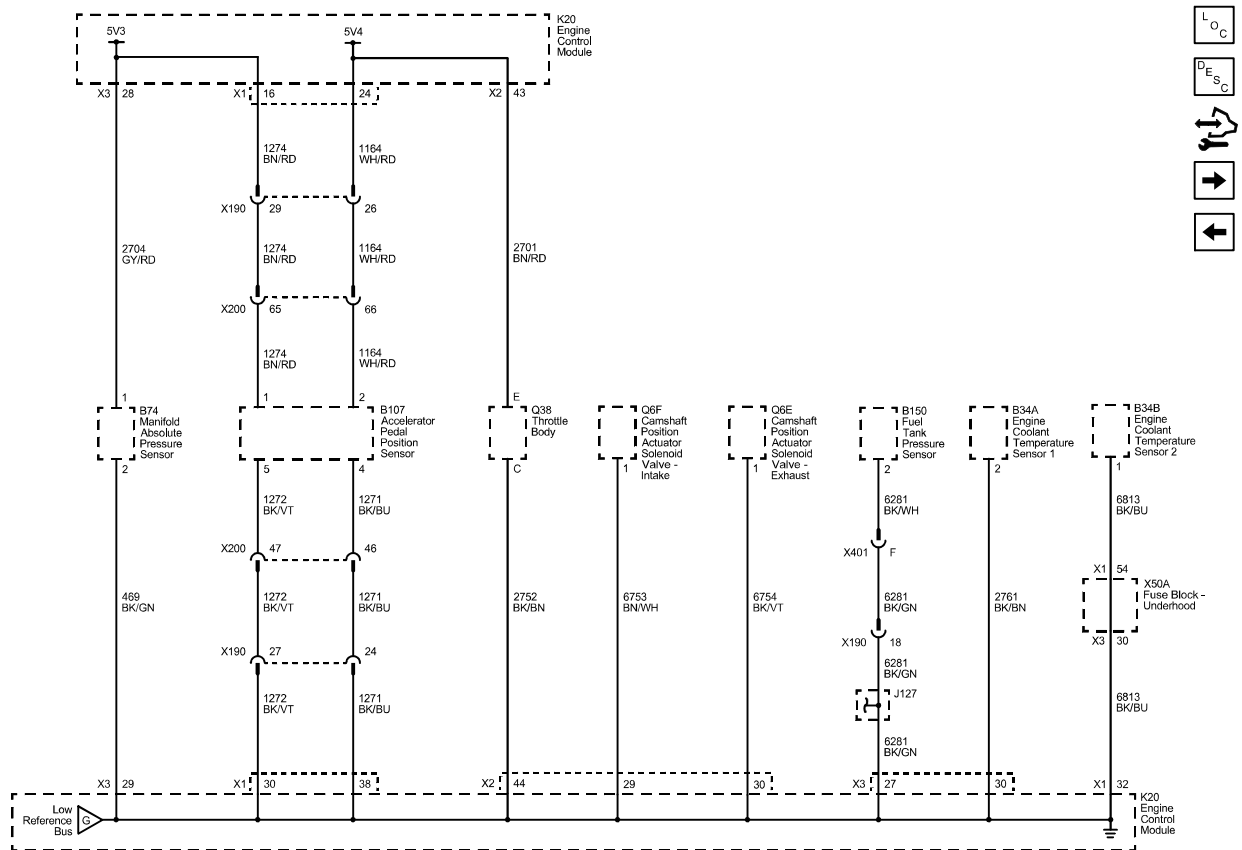
Power, Ground, Serial Data, and MIL



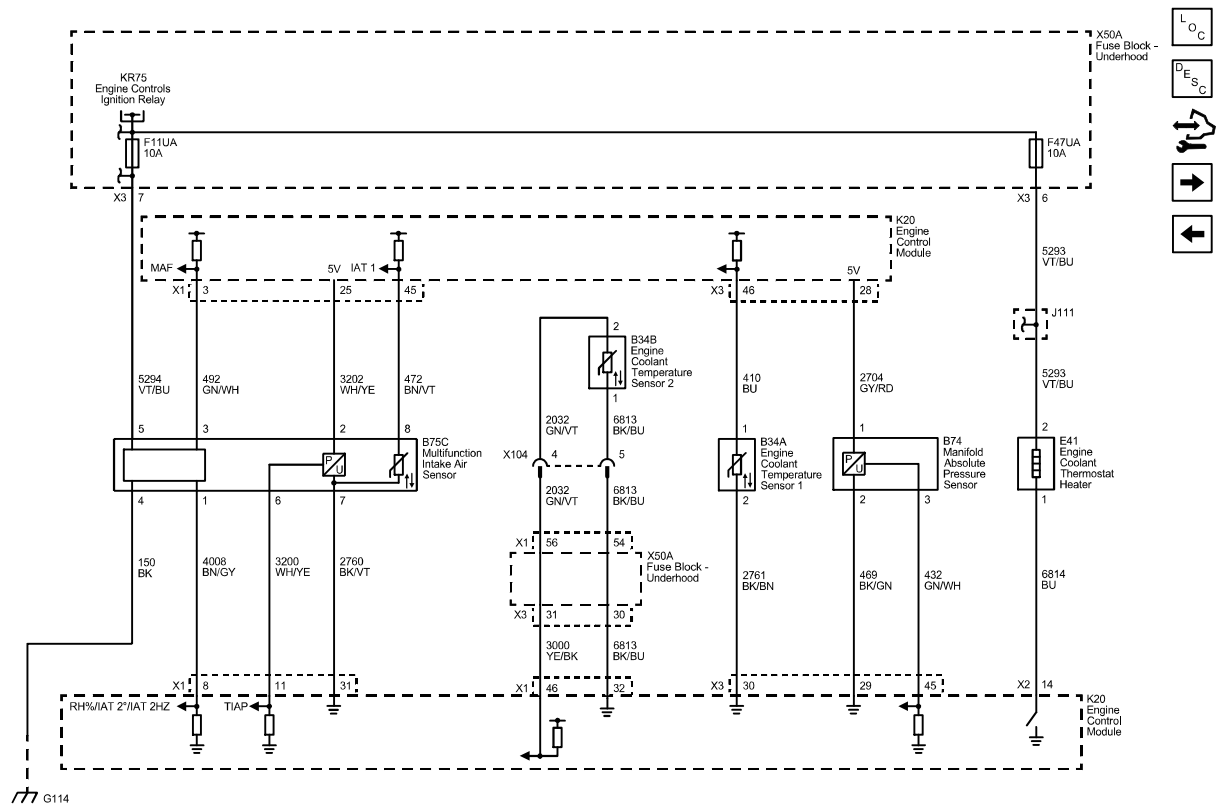
5V and Low Reference Bus (1 of 2)



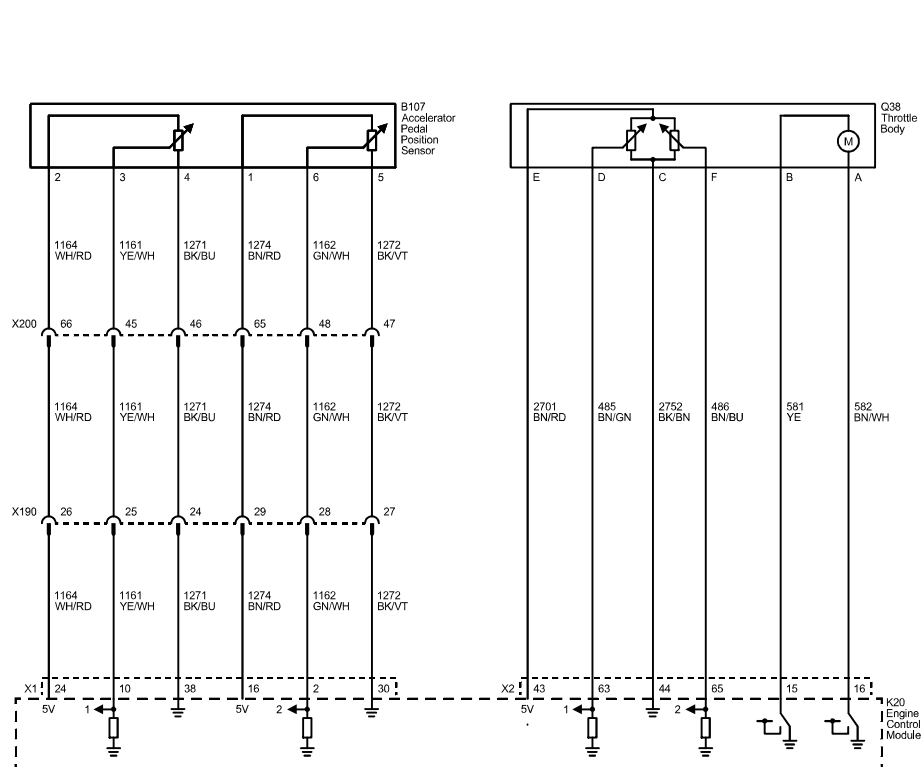
5V and Low Reference Bus (2 of 2)



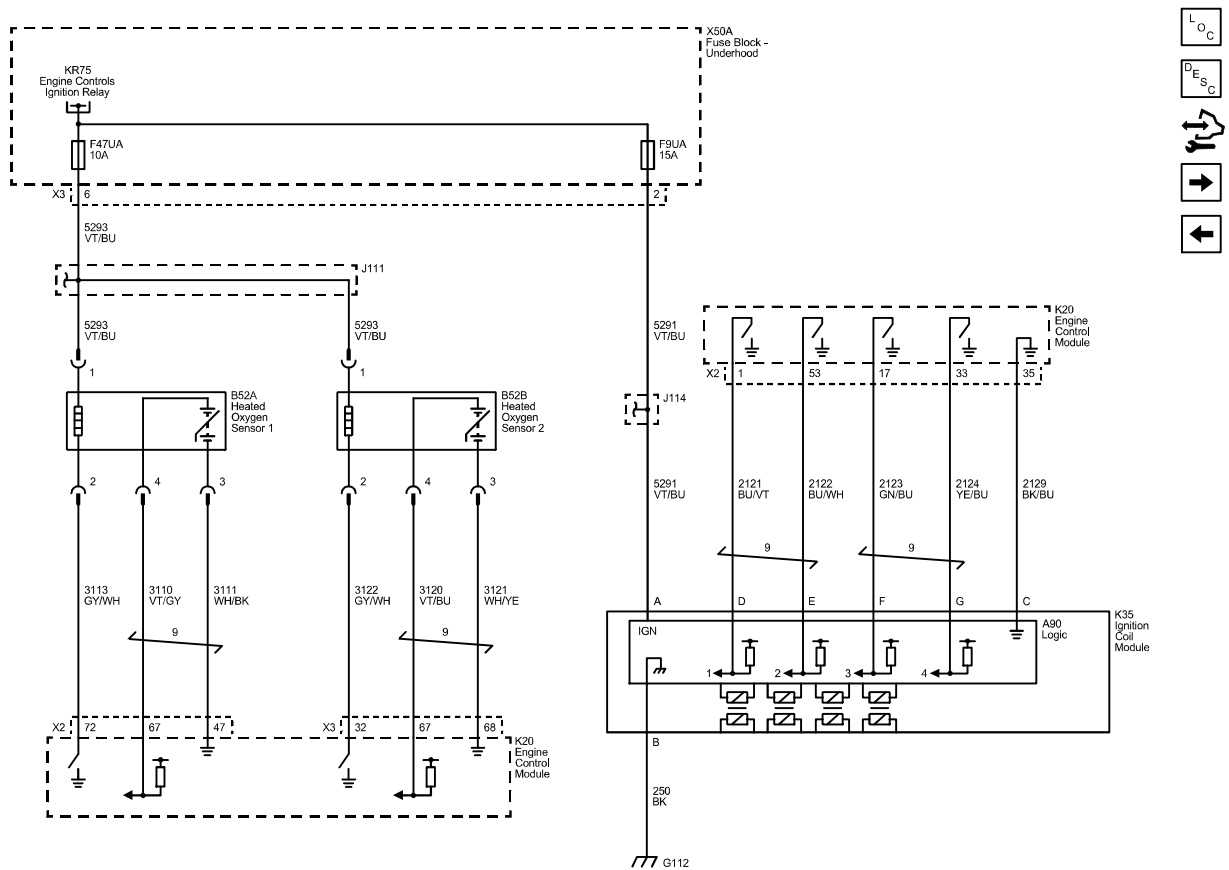
Engine Data Sensors - Pressure and Temperature



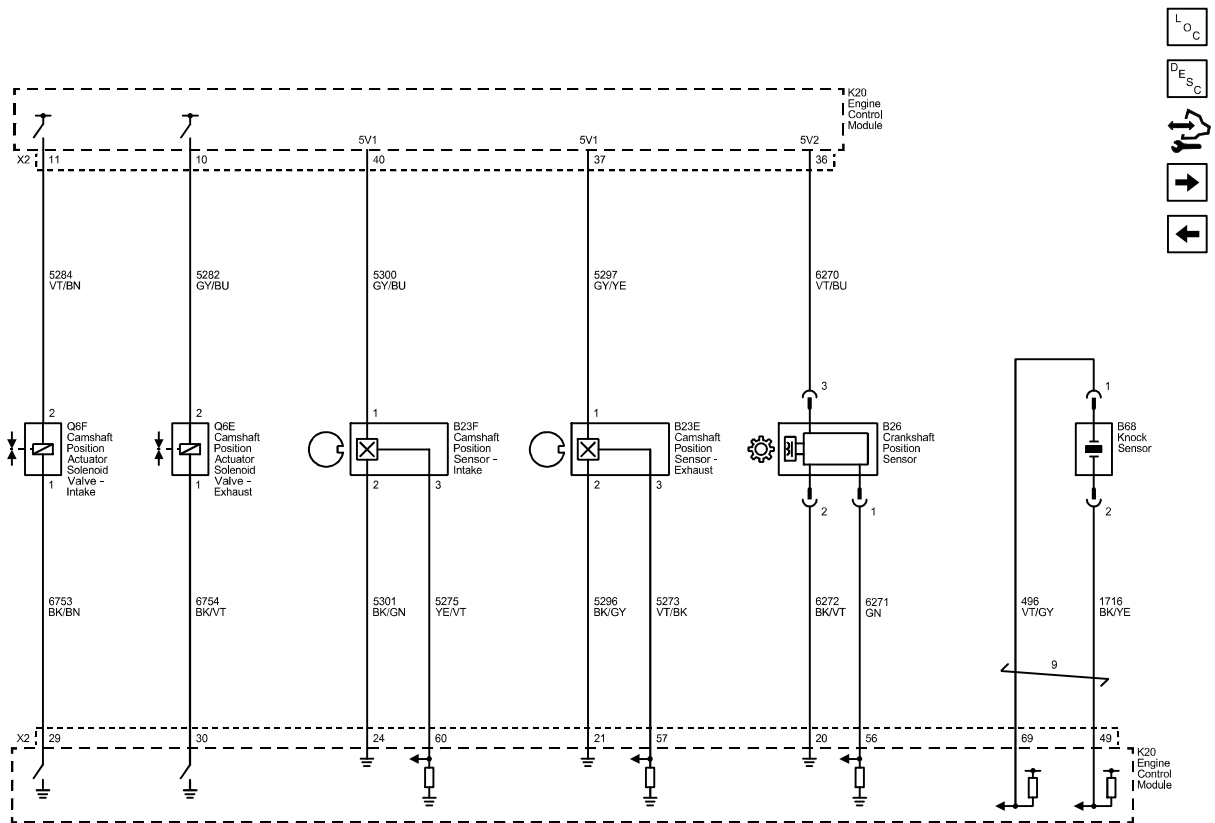
Engine Data Sensors - Throttle Controls



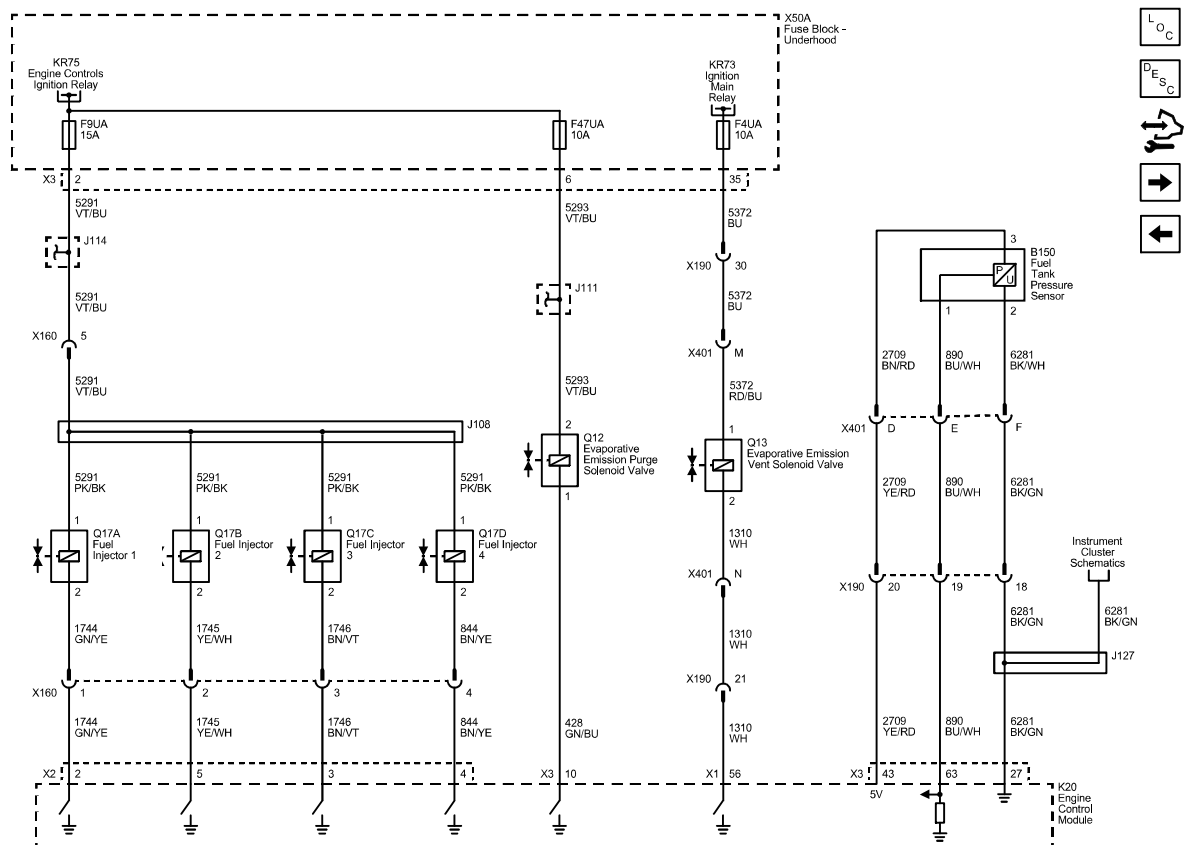
Oxygen Sensors and Ignition System



Camshaft, Crankshaft, and Knock Sensors, Camshaft Actuators



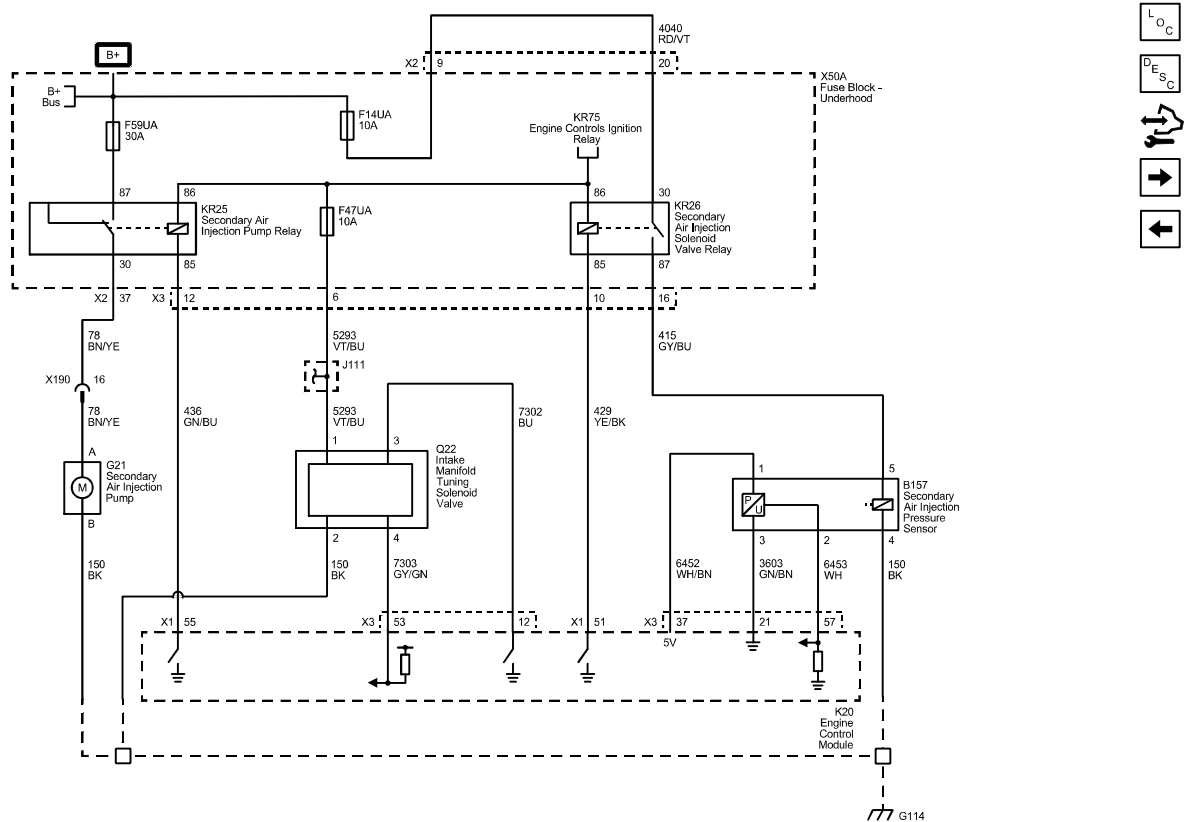
Fuel Controls - Fuel Injectors and Evaporative Controls



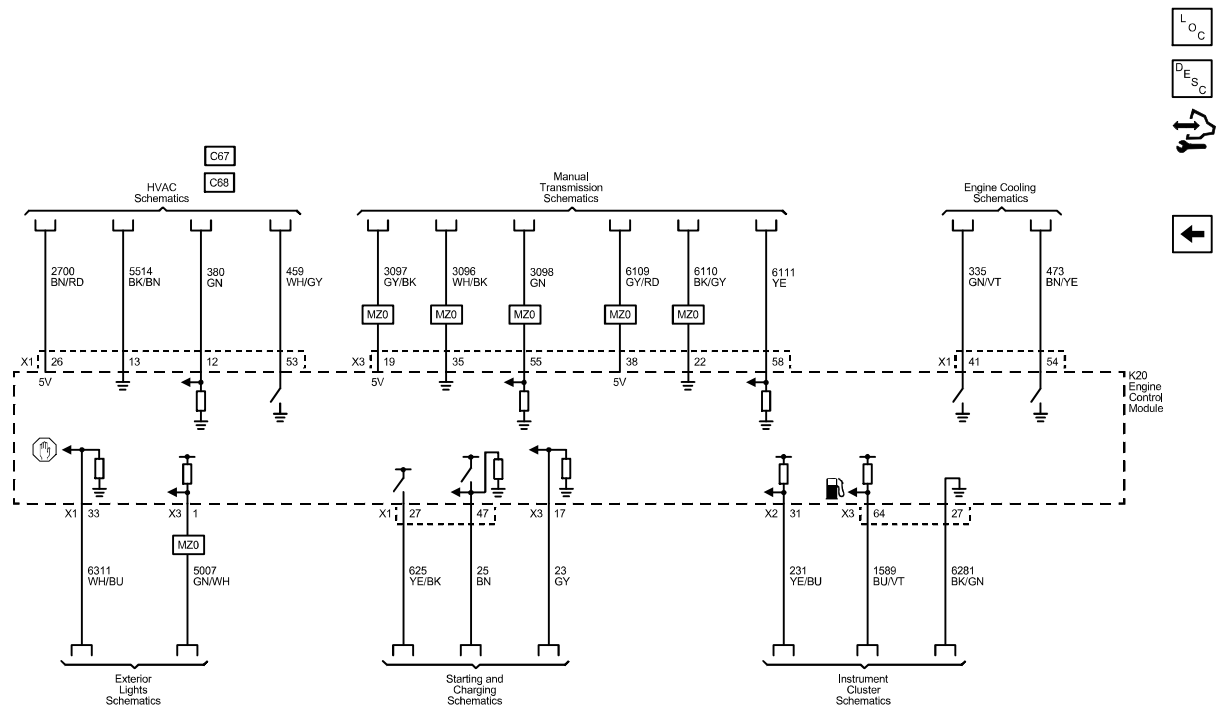
Fuel Controls - Fuel Pump Controls

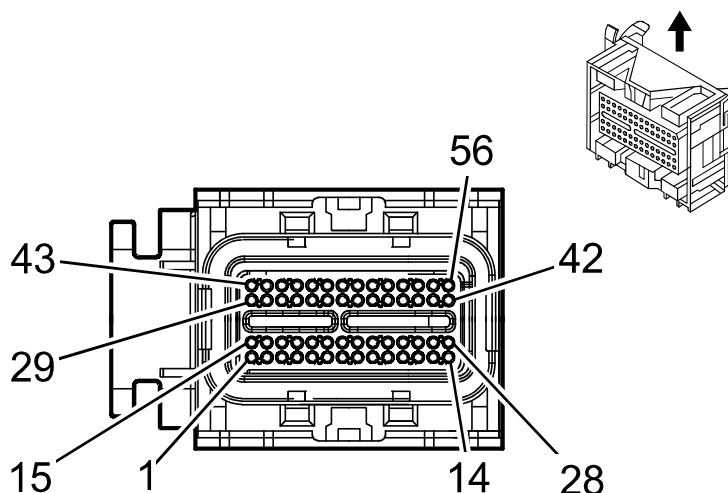


Intake Tuning Valve, Secondary Air Injection (NU6)



Controlled/Monitored Subsystem References



K20 Engine Control Module X1 (LUW/LWE)**Connector Part Information**

- Harness Type: Engine
- OEM Connector: 34576-0703
- Service Connector: 88988373
- Description: 56-Way F (BK)

Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray	Core Crimp	Insulation Crimp
I	13588062	J-35616-35 (VT)	J-38125-12A	Not Available	Not Available	Not Available	Not Available

K20 Engine Control Module X1 (LUW/LWE)

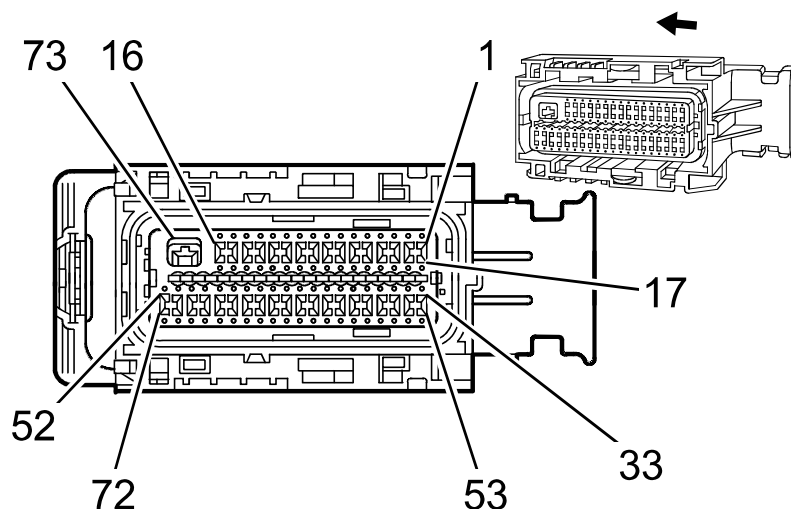
Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	-	-	-	Not Occupied	-	-
2	0.5	GN/WH	1162	Accelerator Pedal Position Signal (2)	I	-

© 2014 General Motors. All rights reserved.

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
3	0.5	GN/WH	492	Mass Air Flow Sensor Signal	I	-
4-7	-	-	-	Not Occupied	-	-
8	0.5	BN/GY	4008	Humidity Sensor Signal	I	-
9	-	-	-	Not Occupied	-	-
10	0.5	YE/WH	1161	Accelerator Pedal Position Signal (1)	I	-
11	0.5	YE/WH	3200	Throttle Inlet Absolute Pressure Sensor Signal	I	-
12	0.5	GN	380	A/C Refrigerant Pressure Sensor Signal	I	-
13	0.5	BK/BN	5514	A/C Refrigerant Pressure Sensor Low Reference	I	-
14-15	-	-	-	Not Occupied	-	-
16	0.5	BN/RD	1274	Accelerator Pedal Position 5 Volt Reference (2)	I	-
17	-	-	-	Not Occupied	-	-
18	0.5	VT/YE	5985	Accessory Wakeup Serial Data	I	-
19	0.75	VT/GY	1274	Run/Crank Ignition 1 Voltage	I	-
20	0.75	RD/WH	1271	Battery Positive Voltage	I	-
21-23	-	-	-	Not Occupied	-	-
24	0.5	WH/RD	1164	Accelerator Pedal Position 5 Volt Reference (1)	I	-
25	0.5	WH/YE	3202	Throttle Inlet Absolute Pressure Sensor 5V Return	I	-
26	0.5	BN/RD	2700	A/C Pressure Sensor 5 Volt Reference	I	-
27	0.5	YE/BK	625	Starter Enable Relay Control	I	-

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
28	0.5	GN/GY	465	Fuel Pump Primary Relay Control	I	-
29	0.5	BU	2500	High Speed GMLAN Serial Data (+) (1)	I	-
30	0.5	BK/VT	1272	Accelerator Pedal Position Low Reference (2)	I	-
31	0.5	BK/VT	2760	Intake Air Temperature Sensor Low Reference	I	-
32	0.5	BK/BU	6813	Coolant Temperature Sensor #2 Low Reference	I	-
33	0.5	WH/BU	6311	Cruise/ETC/TCC Brake Signal	I	-
34	0.5	WH/GY	1786	Transmission Park/Neutral Signal (1)	I	-
35-37	-	-	-	Not Occupied	-	-
38	0.5	BK/BU	1271	Accelerator Pedal Position Low Reference (1)	I	-
39	-	-	-	Not Occupied	-	-
40	0.75	YE	5991	Powertrain Relay Coil Control	I	-
41	0.5	GN/VT	335	Low Speed Cooling Fan Relay Control	I	-
42	-	-	-	Not Occupied	-	-
43	0.5	WH	2501	High Speed GMLAN Serial Data (-) (1)	I	-
44	-	-	-	Not Occupied	-	-
45	0.5	BN/VT	472	Intake Air Temperature Sensor Signal	I	-
46	0.5	YE/BK	3000	Coolant Temperature Sensor #2 Signal	I	-
47	0.5	BN	25	Charge Indicator Control	I	-
48-51	-	-	-	Not Occupied	-	-

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
52	0.5	BN/WH	419	Check Engine Indicator Control	I	-
53	0.5	WH/GY	459	A/C Compressor Clutch Relay Control	I	-
54	0.75	BN/YE	473	High Speed Cooling Fan Relay Control	I	-
55	-	-	-	Not Occupied	-	-
56	0.75	WH	1310	EVAP Canister Vent Solenoid Control	I	-

K20 Engine Control Module X2 (LUW/LWE)**Connector Part Information**

- Harness Type: Engine
- OEM Connector: 34566-0103
- Service Connector: 88988931
- Description: 73-Way F 0.64, 2.8 Series, Sealed (BK)

Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray	Core Crimp	Insulation Crimp
I	13588062	J-35616-35 (VT)	J-38125-12A	Not Available	Not Available	Not Available	Not Available
II	13575291	J-35616-35 (VT)	J-38125-11A	Not Available	Not Available	Not Available	Not Available

K20 Engine Control Module X2 (LUW/LWE)

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	0.75	BU/VT	2121	Ignition Control (1)	I	LUW/LWE

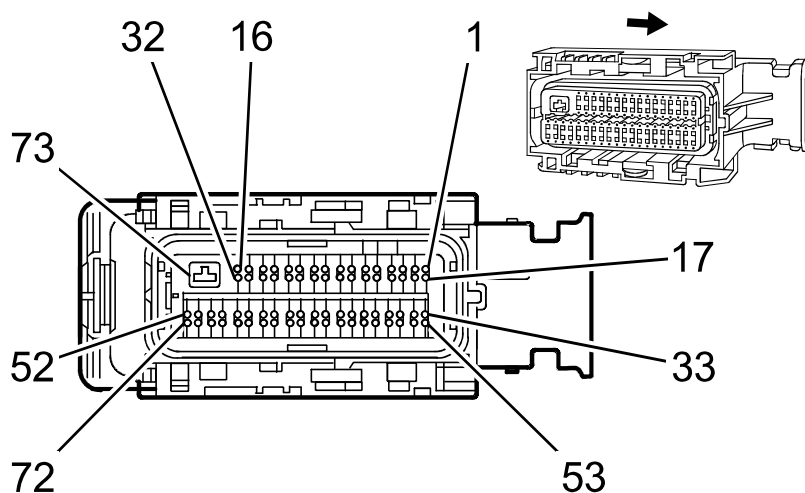
© 2014 General Motors. All rights reserved.

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
2	0.5	GN/YE	1744	Fuel Injector Control (1)	I	LUW/LWE
3	0.5	BN/VT	1746	Fuel Injector Control (3)	I	LUW/LWE
4	0.5	BN/YE	844	Fuel Injector Control (4)	I	LUW/LWE
5	0.5	YE/WH	1745	Fuel Injector Control (2)	I	LUW/LWE
6-9	-	-	-	Not Occupied	-	-
10	0.5	GY/BU	5282	Camshaft Phaser Exhaust Solenoid (1)	I	LUW/LWE
11	0.5	VT/BN	5284	Camshaft Phaser Intake Solenoid (1)	I	LUW/LWE
12	-	-	-	Not Occupied	-	-
13	0.75	VT/BU	5290	Powertrain Main Relay Fused Supply (1)	I	LUW/LWE
14	0.5	BU	6814	Thermostat Engine Cool Control	I	LUW/LWE
15	0.5	YE	581	Throttle Actuator Control Open	I	LUW/LWE
16	0.5	BN/WH	582	Throttle Actuator Control Close	I	LUW/LWE
17	0.75	GN/BU	2123	Ignition Control (3)	I	LUW/LWE
18-19	-	-	-	Not Occupied	-	-
20	0.5	BK/VT	6272	Crankshaft 60X Sensor Low Reference	I	LUW/LWE
21	0.5	BK/GY	5296	Camshaft Position Exhaust Sensor Low Reference (1)	I	LUW/LWE
22-23	-	-	-	Not Occupied	-	-
24	0.5	BK/GN	5301	Camshaft Position Intake Sensor Low Reference (1)	I	LUW/LWE
25-27	-	-	-	Not Occupied	-	-

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
28	0.75	VT/BU	5290	Powertrain Main Relay Fused Supply (1)	I	LUW/LWE
29	0.5	BK/BN	6753	Cam Phaser W Return Low Reference	I	LUW/LWE
30	0.5	BK/VT	6754	Cam Phaser X Return Low Reference	I	LUW/LWE
31	0.5	YE/BU	231	Oil Pressure Switch Signal	I	LUW/LWE
32	-	-	-	Not Occupied	-	-
33	0.75	YE/BU	2124	Ignition Control (4)	I	LUW/LWE
34	-	-	-	Not Occupied	-	-
35	0.75	BK/BU	2129	Ignition Control Low Reference Bank 1	I	LUW/LWE
36	0.5	VT/BU	6270	Crankshaft 60X Sensor Voltage	I	LUW/LWE
37	0.5	GY/YE	5297	Camshaft Position Exhaust Sensor Supply Voltage (1)	I	LUW/LWE
38-39	-	-	-	Not Occupied	-	-
40	0.5	GY/BU	5300	Camshaft Position Intake Sensor Supply Voltage (1)	I	LUW/LWE
41-42	-	-	-	Not Occupied	-	-
43	0.5	BN/RD	2701	Throttle Position Sensor 5 Volt Reference	I	LUW/LWE
44	0.5	BK/BN	2752	Throttle Position Sensor Low Reference	I	LUW/LWE
45-46	-	-	-	Not Occupied	-	-
47	0.5 0.5	WH/BK WH/BK	3111 3111	Heated Oxygen Sensor Low Signal Bank 1 Sensor (1) Heated Oxygen Sensor Low Signal Bank 1 Sensor (1)	I	LWE LUW
48	-	-	-	Not Occupied	-	-

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
49	0.5 0.5	BK/YE BK/YE	1716 1716	Knock Sensor Low Reference (1) Knock Sensor Low Reference (1)	I	LUW LWE
50-52	-	-	-	Not Occupied	-	-
53	0.75	BU/WH	2122	Ignition Control (2)	I	LUW/LWE
54-55	-	-	-	Not Occupied	-	-
56	0.5	GN	6271	Crankshaft 60X Sensor Signal	I	LUW/LWE
57	0.5	VT/BK	5273	Camshaft Position Exhaust Sensor (1)	I	LUW/LWE
58-59	-	-	-	Not Occupied	-	-
60	0.5	YE/VT	5275	Camshaft Position Intake Sensor (1)	I	LUW/LWE
61-62	-	-	-	Not Occupied	-	-
63	0.5	BN/GN	485	Throttle Position Sensor Signal (1)	I	LUW/LWE
64	-	-	-	Not Occupied	-	-
65	0.5	BN/BU	486	Throttle Position Sensor Signal (2)	I	LUW/LWE
66	-	-	-	Not Occupied	-	-
67	0.5 0.5	VT/GY VT/GY	3110 3110	Heated Oxygen Sensor High Signal Bank 1 Sensor (1) Heated Oxygen Sensor High Signal Bank 1 Sensor (1)	I	LUW LWE
68	-	-	-	Not Occupied	-	-
69	0.5 0.5	VT/GY VT/GY	496 496	Knock Sensor Signal (1) Knock Sensor Signal (1)	I	LUW LWE
70-71	-	-	-	Not Occupied	-	-
72	0.5 0.75	GY/WH GY/WH	3113 3113	Heated Oxygen Sensor Heater Low Control Bank 1 Sensor (1)	I	LWE LUW

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
73	2.5	BK	450	Heated Oxygen Sensor Heater Low Control Bank 1 Sensor (1)	II	LUW/LWE
				Ground		

K20 Engine Control Module X3 (LUW/LWE)**Connector Part Information**

- Harness Type: Engine
- OEM Connector: 34566-0203
- Service Connector: 88988372
- Description: 73-Way F 0.64, 2.8 Series, Sealed (BK with GY Terminal Position Assurance)

Terminal Part Information

Terminal Type ID	Terminated Lead	Diagnostic Test Probe	Terminal Removal Tool	Service Terminal	Tray	Core Crimp	Insulation Crimp
I	13588062	J-35616-35 (VT)	J-38125-12A	Not Available	Not Available	Not Available	Not Available

K20 Engine Control Module X3 (LUW/LWE)

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
1	0.5	GN/WH	5007	Reverse Switch Signal	I	MZ0
2-9	-	-	-	Not Occupied	-	-

© 2014 General Motors. All rights reserved.

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
10	0.75	GN/BU	428	EVAP Canister Purge Solenoid Control	I	LUW/LWE
11	-	-	-	Not Occupied	-	-
12	0.5	BU	7302	Intake Manifold Tuning Valve (IMTV) Control - Signal	I	LUW/LWE
13-16	-	-	-	Not Occupied	-	-
17	0.5	GY	23	Generator Field Duty Cycle Signal	I	LUW/LWE
18	-	-	-	Not Occupied	-	-
19	0.5	WH/BK	3097	Output Speed (Digital) 5V Sensor Return	I	MZ0
20	-	-	-	Not Occupied	-	-
21	0.5	GN/BN	3603	Intake Manifold Control (3)	I	LWE
22	0.5 0.5	BK/GY BK/YE	6110 5382	Clutch Apply Sensor Low Reference Brake Position Sensor Low Reference	I	MZ0 MH8/MH9
23-26	-	-	-	Not Occupied	-	-
27	0.5	BK/GN	6281	Fuel Level Sensor Low Reference	I	LUW/LWE
28	0.5	GY/RD	2704	Manifold Absolute Pressure Sensor 5 Volt Reference	I	LUW/LWE
29	0.5	BK/GN	469	Manifold Absolute Pressure Sensor Low Reference	I	LUW/LWE
30	0.5	BK/BN	2761	Coolant Temperature Sensor Low Reference	I	LUW/LWE
31	-	-	-	Not Occupied	-	-
32	0.75 0.5	GY/WH GY/WH	3122 3122	Heated Oxygen Sensor Heater Low Control Bank 1 Sensor (2) Heated Oxygen Sensor Heater Low Control Bank 1 Sensor (2)	I	LUW LWE

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
33-34	-	-	-	Not Occupied	-	-
35	0.5	GY/BK	3096	Output Speed (Digital) 5V Sensor Reference	I	MZ0
36	-	-	-	Not Occupied	-	-
37	0.5	WH/BN	6452	Air Injection Reaction Pump Sensor Supply Voltage	I	LWE
38	0.5 0.5	GY/RD WH/RD	6109 5381	Clutch Apply Sensor Voltage Reference Brake Position Sensor 5 Volt Reference	I	MZ0 MH8/MH9
39-42	-	-	-	Not Occupied	-	-
43	0.5	YE/RD	2709	Fuel Tank Pressure Sensor 5 Volt Reference	I	LUW/LWE
44	-	-	-	Not Occupied	-	-
45	0.5	GN/WH	432	Manifold Absolute Pressure Sensor Signal	I	LUW/LWE
46	0.5	BU	410	Engine Coolant Temperature Sensor Signal	I	LUW/LWE
47-52	-	-	-	Not Occupied	-	-
53	0.5	GY/GN	7303	Intake Manifold Tuning Valve (IMTV) Position - Signal	I	LUW/LWE
54	-	-	-	Not Occupied	-	-
55	0.5	GN	3098	Output Speed (Digital) Signal	I	MZ0
56	-	-	-	Not Occupied	-	-
57	0.5	WH	6453	Air Injection Reaction Pump Sensor Signal	I	LWE
58	0.5 0.5	YE WH/GN	6111 5380	Clutch Apply Sensor Signal Brake Position Sensor Signal	I	MZ0 MH8/MH9

Pin	Size	Color	Circuit	Function	Terminal Type ID	Option
59-62	-	-	-	Not Occupied	-	-
63	0.5	BU/WH	890	Fuel Tank Pressure Sensor Signal	I	LUW/LWE
64	0.5	BU/VT	1589	Primary Fuel Level Sensor Signal	I	LUW/LWE
65-66	-	-	-	Not Occupied	-	-
67	0.5	VT/BU	3120	Heated Oxygen Sensor High Signal Bank 1 Sensor (2)	I	LUW/LWE
68	0.5	WH/YE	3121	Heated Oxygen Sensor Low Signal Bank 1 Sensor (2)	I	LUW/LWE
69-73	-	-	-	Not Occupied	-	-