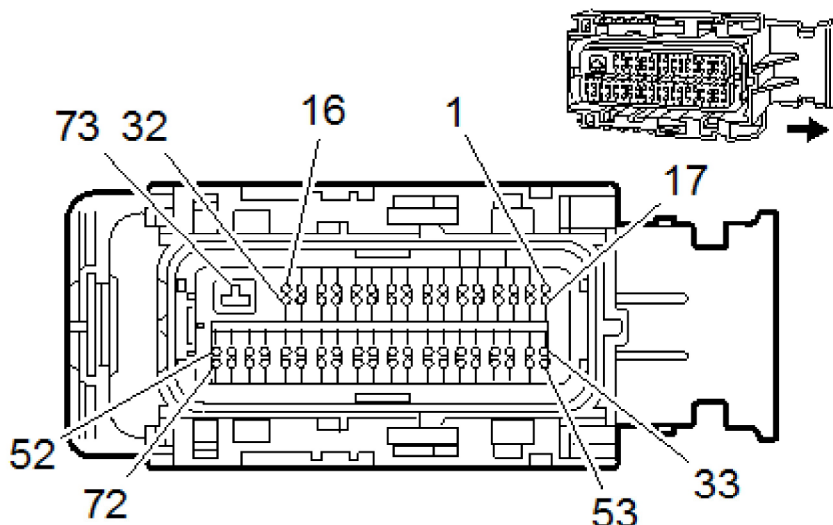


## Engine Control Module Connector End Views

**Table 1:** [Engine Control Module X1](#)

**Table 2:** [Engine Control Module X2](#)

### [Engine Control Module X1](#)



#### Connector Part Information

- OEM: 15499466
- Service: 88988931
- Description: 73-Way F Receptacle 0.64 2.8 Sealed (BK)

#### Terminal Part Information

- Pins: 1, 12-13, 16, 23-24, 29-34, 36, 50-51, 56-57, 59, 63, 68, 70-71
- Terminal/Tray: 33467-0003/23
- Core/Insulation Crimp: H/H
- Release Tool/Test Probe: J-38125-213/J-35616-64B (L-BU)
- Pins: 2-3, 9-11, 18-20, 27-28, 37, 38, 41, 47, 49, 52, 61, 64-65, 69, 71-72
- Terminal/Tray: 33467-0005/23
- Core/Insulation Crimp: J/J
- Release Tool/Test Probe: J-38125-213/J-35616-64B (L-BU)
- Pins: 73
- Terminal/Tray: 7116-4152-02/9
- Core/Insulation Crimp: A/5
- Release Tool/Test Probe: 12094430/J-35616-35 (VT)

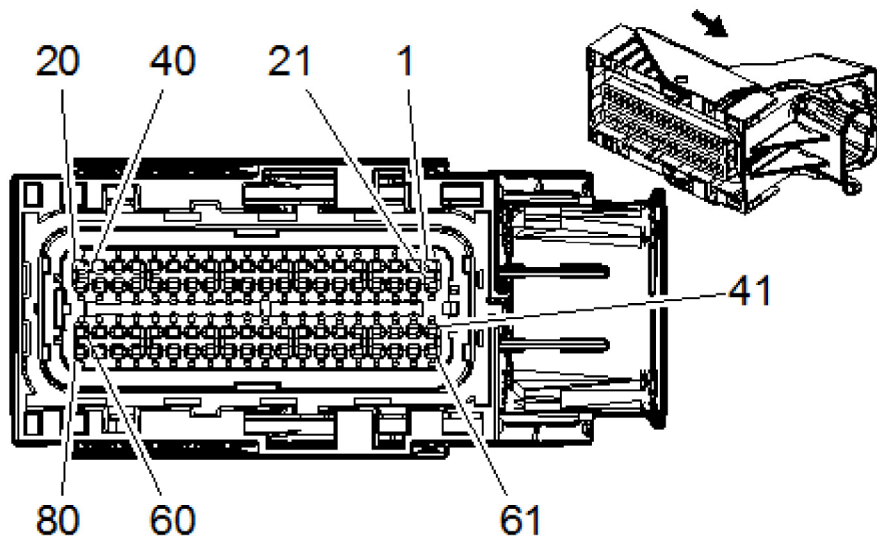
**Engine Control Module X1**

<b>Pin</b>	<b>Wire Color</b>	<b>Circuit No.</b>	<b>Function</b>
1	0.35 OG/BK	1786	Park/Neutral Signal
2	0.5 GY/BK	1694	4WD Low Signal (NQG/NP2)
3	0.5 TN/WH	1695	Axle Switch Signal (NQG/NP2)
4-8	—	—	Not Used
9	0.5 L-BU/WH	6311	Brake Switch Signal
10	0.5 PU/WH	1668	HO2S High Signal - Bank 1 Sensor 2
11	0.5 TN/WH	1669	HO2S Low Signal - Bank 1 Sensor 2
12	0.35 OG/BK	380	A/C Refrigerant Pressure Sensor Signal (CJ2/C67)
13	0.35 TN	5514	Low Reference (CJ2/C67)
14-15	—	—	Not Used
16	0.35 PU	1589	Fuel Level Sensor Signal - Primary
17	0.35 D-BU/WH	473	High Speed Cooling Fan Relay Control (-LY6)
18	0.5 D-BU	5985	Accessory Wakeup Serial Data
19	0.5 PK	439	Ignition 1 Voltage
20	0.5 RD/WH	440	Battery Positive Voltage
21-22	—	—	Not Used
23	0.35 PU	1272	Low Reference
24	0.35 D-GN	890	Fuel Tank Pressure Sensor Signal
25-26	—	—	Not Used
27	0.5 TN/BK	2501	High Speed GMLAN Serial Data Bus-
28	0.5 TN/BK	2500	High Speed GMLAN Serial Data Bus+
29	0.35 D-BU	1161	APP Sensor 1 Signal

Pin	Wire Color	Circuit No.	Function
30	0.35 BN	1271	Low Reference
31	0.35 TN/BK	6049	Low Reference
32	0.35 L-BU	1162	APP Sensor 2 Signal
33	0.35 GY	2709	5-Volt Reference 1
34	0.35 GY/WH	2700	5-Volt Reference (CJ2/C67)
35	—	—	Not Used
36	0.35 TN	1274	5-Volt Reference 1
37	0.5 TN/BK	472	IAT Sensor Signal
38	0.5 TN	2760	Low Reference
39-40	—	—	Not Used
41	0.5 YE	492	MAF Sensor Signal
42-46	—	—	Not Used
47	0.5 PK/BK	1339	Ignition 1 Voltage
48	—	—	Not Used
49	0.5 TN	1671	HO2S Low Signal – Bank 2 Sensor 2
50	0.35 D-GN/WH	465	Fuel Pump Relay Control – Primary (LGM/LY6/LC9) Fuel System Control Module Signal (L76/L92/LH6/LY2/LY5)
51	0.35 TN	1465	Fuel Pump Relay Control – Secondary (LY6)
52	0.5 YE/BK	625	Starter Enable Relay Control
53-55	—	—	Not Used
56	0.35 WH/BK	1164	5-Volt Reference 2
57	0.35 YE/BK	1827	Vehicle Speed Signal
58	0.35 D-GN	335	Low Speed Cooling Fan Relay Control (-LY6)

Pin	Wire Color	Circuit No.	Function
59	0.35 YE	5991	Powertrain Relay Coil Control
60	—	—	Not Used
61	0.5 WH	1310	EVAP Canister Vent Solenoid Control
62	—	—	Not Used
63	0.35 D-GN/WH	459	A/C Compressor Clutch Relay Control (CJ2/C67)
64	0.5 OG/WH	3223	HO2S Heater Low Control (Bank 2 Sensor 2)
65	0.5 GY/WH	3122	HO2S Heater Low Control – Bank 2 Sensor 1
66–67	—	—	Not Used
68	0.35 BN/WH	419	MIL Control
69	0.5 PU	1670	HO2S High Signal – Bank 2 Sensor 2
70	0.35 L-BU	1937	Secondary Fuel Level Sensor Signal (LY6)
71	0.5 PU/WH	821	VSS High Signal (20/30 Series +NQF/+NQG/+NP2)
	0.35 OG/BK	6399	Replicated TOS Signal (10 Series/20/30 Series –NQF/–NQG/–NP2)
72	0.5 L-GN/BK	822	VSS Low Signal (20/30 Series +NQF/+NQG/+NP2)
73	3.0 BK/WH	451	Ground

### [Engine Control Module X2](#)



**Connector Part Information**

- OEM: 13511426
- Service: 19115670
- Description: 80-Way F Receptacle 0.64 2.8 Sealed (GY)

**Terminal Part Information**

- Pins: 2-3, 16, 34, 35, 41, 43, 44, 50, 52-53, 58, 63-66, 68-69
- Terminal/Tray: 33467-0003/23
- Core/Insulation Crimp: H/H
- Release Tool/Test Probe: J-38125-213/J-35616-64B (L-BU)
- Pins: 5-6, 8, 12-13, 17-22, 32-33, 37-40, 56-57, 59-61, 70-79
- Terminal/Tray: 33467-0005/23
- Core/Insulation Crimp: J/J
- Release Tool/Test Probe: J-38125-213/J-35616-64B (L-BU)
- Pins: 26-27, 29-30
- Terminal/Tray: 33467-0005/23
- Core/Insulation Crimp: K/K
- Release Tool/Test Probe: J-38125-213/J-35616-64B (L-BU)

**Engine Control Module X2**

Pin	Wire Color	Circuit No.	Function
1	—	—	Not Used
2	0.35 PU/WH	6270	5-Volt Reference 2
3	0.35 GY	2701	5-Volt Reference 2

<b>Pin</b>	<b>Wire Color</b>	<b>Circuit No.</b>	<b>Function</b>
4	—	—	Not Used
5	0.5 BN	582	TAC Motor Control – 2
6	0.5 YE	581	TAC Motor Control – 1
7	—	—	Not Used
8	0.5 D-GN/WH	428	EVAP Canister Purge Solenoid Control
9	0.5 GY	5493	Cylinder 6 Shutoff Solenoid Control 3 (–4.8L)
10	0.5 D-BU	5491	Cylinder Shutoff Solenoid Control (1) (–4.8L)
11	0.5 OG	5494	Cylinder 4 Shutoff Solenoid Control 2 (–4.8L)
12	0.5 GY/WH	3113	HO2S Heater Low Control – Bank 1 Sensor 1
13	0.5 L-GN	3212	HO2S Heater Low Control – Bank 2 Sensor 1
14	0.5 L-GN/BK	5492	Cylinder 7 Shutoff Solenoid Control 4 (–4.8L)
15	—	—	Not Used
16	0.35 PU	5284	Camshaft Actuator Solenoid Control (6.0L/6.2L)
17	0.5 D-BU/WH	878	Fuel Injector 8 Control
18	0.5 TN/WH	845	Fuel Injector 5 Control
19	0.5 YE/BK	846	Fuel Injector 6 Control
20	0.5 TN	1744	Fuel Injector 1 Control
21	0.5 YE	410	ECT Sensor Signal
22	0.5 TN	2761	Low Reference
23–25	—	—	Not Used
26	0.8 D-BU	496	KS 1 Signal

<b>Pin</b>	<b>Wire Color</b>	<b>Circuit No.</b>	<b>Function</b>
27	0.8 GY	1716	KS 1 Signal
28	—	—	Not Used
29	0.8 L-BU	1876	KS 2 Signal
30	0.8 GY	2303	KS 2 Signal
31	—	—	Not Used
32	0.5 GY	23	Generator Field Duty Cycle Signal
33	0.5 BN	1174	Oil Level Switch Signal
34	0.35 BK	2755	Low Reference
35	0.35 TN	2752	Low Reference
36	—	—	Not Used
37	0.5 L-GN/BK	1745	Fuel Injector 2 Control
38	0.5 PK/BK	1746	Fuel Injector 3 Control
39	0.5 L-BU/BK	844	Fuel Injector 4 Control
40	0.5 OG/BK	877	Fuel Injector 7 Control
41	0.35 GY	2705	5-Volt Reference 1
42	—	—	Not Used
43	0.35 GY	2704	5-Volt Reference 1
44	0.35 D-BU	6259	5-Volt Reference 1
45-49	—	—	Not Used
50	0.35 TN/WH	331	Oil Pressure Sensor Signal
51	—	—	Not Used
52	0.35 TN	2199	Low Reference (6.0L/6.2L)
53	0.35 OG/BK	469	Low Reference
54-55	—	—	Not Used

<b>Pin</b>	<b>Wire Color</b>	<b>Circuit No.</b>	<b>Function</b>
56	0.5 TN	1664	HO2S Low Signal – Bank 1 Sensor 1
57	0.5 PU/WH	1665	HO2S High Signal – Bank 1 Sensor 1
58	0.35 L-GN	432	MAP Sensor Signal
59	0.5 PU	1666	HO2S High Signal – Bank 2 Sensor 1
60	0.5 TN	1667	H02S Low Signal – Bank 2 Sesnor 1
61	0.5 BN	25	Charge Indicator Signal
62	—	—	Not Used
63	0.35 PU	486	TP Sensor 2 Signal
64	0.35 D-BU/WH	6265	CMP Sensor Signal
65	0.35 D-GN	485	TP Sensor 1 Signal
66	0.35 BN	6266	Low Reference
67	—	—	Not Used
68	0.35 WH/BK	6271	CKP Sensor Signal
69	0.35 GY/BK	6272	Low Reference
70	0.5 PU	2121	IC 1 Control
71	0.5 PU/WH	2128	IC 8 Control
72	0.5 OG	2127	IC 7 Control
73	0.5 OG/WH	2122	IC 2 Control
74	0.5 L-BU/WH	2126	IC 6 Control
75	0.5 D-GN	2125	IC 5 Control
76	0.5 D-GN/WH	2124	IC 4 Control
77	0.5 L-BU	2123	IC 3 Control
78	0.5 BN	2129	Low Reference
79	0.5 BN/WH	2130	Low Reference



<b>Pin</b>	<b>Wire Color</b>	<b>Circuit No.</b>	<b>Function</b>
80	—	—	Not Used