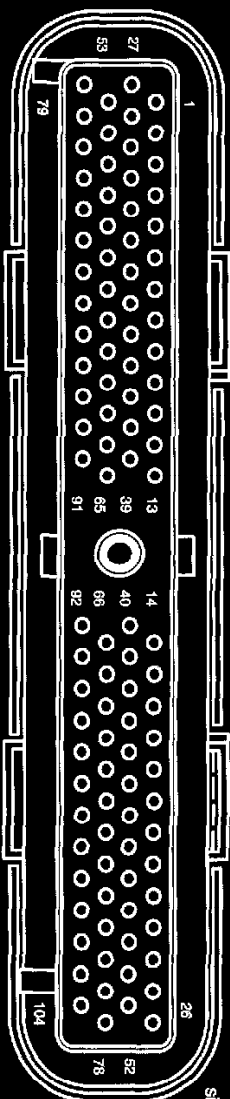


Engine Control Module: Connector Views

Powertrain Control Module

C175 (GY)
Gasoline engines
12A581
Powertrain Control Module (PCM) (12A650)



F10A001

| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 1 | 1025 (OG/YE) | Ignition coil (12029), control |
| 2 | - | not used |
| 3 | 570 (BK/WH) | Ground |
| 4 | 322 (LB/YE) | Customer Access, signal |
| 5 | - | not used |
| 6 | *237 (OG/YE) | Shift solenoid A control |
| 7 | - | not used |
| 8 | - | not used |
| 9 | - | not used |
| 10 | - | not used |
| 11 | *315 (VT/OG) | Shift solenoid B control |
| 12 | *911 (WH/LG) | Transmission Control Indicator Lamp (TCIL) |
| 13 | 107 (NT) | Module programming signal |
| 14 | - | not used |
| 15 | 915 (PK/LB) | SCP Bus - |
| 16 | 914 (TN/OG) | SCP Bus + |
| 17 | - | not used |
| 18 | - | not used |
| 19 | - | not used |
| 20 | *924 (BN/OG) | Coast Clutch Solenoid (CCS), control |
| 21 | 349 (DB) | Crankshaft position sensor (6C315) - |
| 22 | 350 (GY) | Crankshaft position sensor (6C315) + |
| 23 | 570 (BK/WH) | Ground |
| 24 | 570 (BK/WH) | Ground |
| 25 | 567 (LB/YE) | Ground |

| Pin | Circuit | Circuit function |
|-----|---------------|---|
| 26 | 1024 (LG/WH) | Ignition coil (12029), control |
| 27 | 1021 (LG/YE) | Ignition coil (12029), control |
| 28 | - | not used |
| 29 | 224 (TN/WH) | Overdrive cancel switch (7G550), input |
| 30 | - | not used |
| 31 | - | not used |
| 32 | 311 (DG/VT) | Knock sensor (12A699), Signal return |
| 33 | 676 (PK/OG) | Ground |
| 34 | 1144 (YE/BK) | Digital Transmission Range (DTR) sensor TR1 |
| 35 | **392 (RD/LG) | Heated Oxygen Sensor (HO2S) #12 (9G444), input |
| 36 | 968 (TN/LB) | Mass Air Flow (MAF) sensor (12B579), signal, return |
| 37 | *923 (OG/BK) | Transmission Fluid Temperature (TFT) sensor, input |
| 38 | - | not used |
| 39 | 743 (GY) | Intake Air Temperature (IAT) sensor (12A697), input |
| 40 | 238 (DG/YE) | Fuel pump, monitor |
| 41 | 439 (TN/LG) | A/C pressure switch, signal |
| 42 | 1101 (GY/BD) | Fuel injector 10 (9F593), control |
| 43 | 71 (OG/LG) | Powertrain Control Module (PCM) (12A650) - Data output link |
| 44 | - | not used |
| 45 | - | not used |
| 46 | - | not used |

with automatic transmission
** California
*** manual transmission

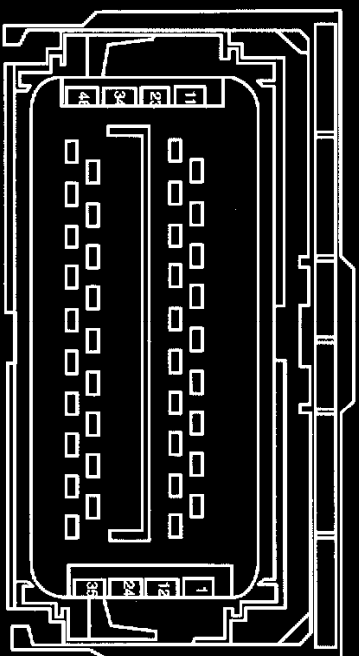
| Pin | Circuit | Circuit function |
|-----|----------------|---|
| 47 | **960 (BN/PK) | EGR Vacuum Regulator (EVR), control |
| 48 | 76 (LG/WH) | Customer Access, Tachometer signal |
| 49 | 1145 (LB/BK) | Digital Transmission Range (DTR) sensor, TR2 |
| 50 | **1143 (WH/BK) | Digital Transmission Range (DTR) sensor, TR4 |
| 51 | 570 (BK/WH) | Ground |
| 52 | 1028 (WH/PK) | Coil On Plug (COP), control |
| 53 | 1030 (DG/VY) | Coil On Plug (COP), control |
| 54 | *480 (VT/YE) | Torque Converter Clutch (TCC) solenoid, control |
| 55 | 729 (RD/WH) | Voltage supplied at all times (overload protected) |
| 56 | 191 (LG/BK) | Vapor management valve, control |
| 57 | 310 (YE/RD) | Knock sensor (12A899) |
| 58 | 679 (GY/BK) | vehicle speed signal |
| 59 | *970 (DG/WH) | Turbine Shaft Speed (TSS) sensor (7M101), input |
| 60 | 74 (GY/LB) | Heated Oxygen Sensor (HO2S) #11 (9F472), input |
| 61 | — | not used |
| 62 | **791 (RD/PK) | Fuel tank pressure transducer sensor (9C988), input |
| 63 | — | not used |
| 64 | 199 (LB/YE) | Digital Transmission Range (DTR) sensor, TR3A |
| 64 | ***199 (LB/YE) | Clutch pedal position switch |
| 65 | **352 (BN/LG) | Differential Pressure Feedback EGR (DPFBE) sensor, input |
| 66 | 1102 (YE/LG) | Cylinder-head temperature sensor (6G004), to, Power-train Control Module (PCM) (12A650) |
| 67 | **91 (VT/WH) | EVAP canister vent control solenoid, control |
| 68 | 1100 (GY/BK) | Fuel Injector 9 (9F593), control |
| 69 | 331 (PK/YE) | A/C clutch relay, control |
| 70 | — | not used |
| 71 | 361 (RD) | Voltage supplied in Start and Run (overload protected) |
| 72 | 561 (TN/RD) | Fuel Injector 7, control |
| 73 | 559 (TN/BK) | Fuel Injector 5, control |
| 74 | 557 (BN/YE) | Fuel Injector 3, control |

| Pin | Circuit | Circuit function |
|-----|---------------|--|
| 75 | 555 (TN) | Fuel Injector 1, control |
| 76 | 570 (BK/WH) | Ground |
| 77 | 570 (BK/WH) | Ground |
| 78 | 1027 (PK/LB) | Coil On Plug (COP), control |
| 79 | 1029 (WH/RD) | Coil On Plug (COP), control |
| 80 | 926 (LB/OG) | Fuel pump relay, control |
| 81 | *925 (WH/YE) | Electronic Pressure Control (EPC) solenoid, control |
| 82 | 1142 (WH/RD) | Coil On Plug (COP), control |
| 83 | 264 (WH/LB) | Idle Air Control (IAC) valve (9F715), control |
| 84 | 136 (DB/YE) | Output Shaft Speed (OSS) sensor (7M101), input |
| 85 | 795 (DG) | Camshaft position sensor (6B288), signal |
| 86 | — | not used |
| 87 | 94 (RD/BK) | Heated Oxygen Sensor (HO2S) #21 (9F472), input |
| 88 | 967 (LB/RD) | Mass Air Flow (MAF) sensor (12B579), output |
| 89 | 355 (GY/WH) | Throttle Position Sensor (TPS) (9B989), input |
| 90 | 351 (BN/WH) | Reference voltage |
| 91 | 359 (GY/RD) | signal return Reference voltage |
| 92 | 810 (RD/LG) | Brake pedal position switch (13480), input Signal return |
| 93 | 387 (RD/WH) | Heated Oxygen Sensor (HO2S) #11 (9F472), heater |
| 94 | 388 (YE/LB) | Heated Oxygen Sensor (HO2S) #21 (9F472), heater |
| 95 | **389 (WH/BK) | Heated Oxygen Sensor (HO2S) #12 (9G444), heater |
| 96 | — | not used |
| 97 | 361 (RD) | Voltage supplied in Start and Run (overload protected) |
| 98 | 562 (LB) | Fuel Injector 8, control |
| 99 | 560 (LG/OG) | Fuel Injector 6, control |
| 100 | 558 (BN/LB) | Fuel Injector 4, control |
| 101 | 556 (WH) | Fuel Injector 2, control |
| 102 | 1141 (YE/BK) | Coil On Plug (COP), control |
| 103 | 570 (BK/WH) | Ground |
| 104 | 1026 (PK/WH) | Coil On Plug (COP), control |

C1381a (BK)

12A581

Powertrain Control Module (PCM) (12A650)



* automatic transmission
** manual transmission

| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 1 | 76 (LG/WH) | not used |
| 2 | 381 (PK/YE) | A/C clutch relay, control |
| 3 | 71 (OG/LG) | Powertrain Control Module (PCM) (12A650), Data output link |
| 4 | 262 (BN/PK) | Starter relay, circuit, control |
| 5 | 926 (LB/OG) | Fuel pump relay, control |
| 6 | - | not used |
| 7 | 1857 (YE/WH) | not used |
| 8 | 439 (TN/LG) | A/C clutch cycling pressure switch (19D594), Signal re-turn |
| 9 | 203 (OG/LB) | Speed control indicator, control |
| 10 | 587 (LB/YE) | Ground |
| 11 | 570 (BK/WH) | Ground |
| 12 | 322 (LB/YE) | not used |
| 13 | 3072 (PK/YE) | CAN Bus 1H |
| 14 | 3073 (RD/WH) | CAN Bus 1L |
| 15 | 643 (RD) | Water-in-fuel sensor, signal |
| 16 | 440 (TN/LG) | A/C clutch cycling pressure switch (19D594), Reference voltage |
| 17 | 182 (LG/RD) | Parking brake switch (15A851), signal |
| 18 | 810 (RD/LG) | Brake pedal position switch (13480), input |
| 19 | 787 (PK/BK) | Fuel pump, monitor |

| Pin | Circuit | Circuit function |
|-----|---------------|--|
| 20 | 3094 (LB/RD) | Accelerator pedal position sensor, Signal return 2 |
| 21 | 986 (TN/LB) | Mass Air Flow (MAF) sensor (12B579), Signal return |
| 22 | 239 (WH/OG) | not used |
| 23 | 570 (BK/WH) | Ground |
| 24 | 133 (BK) | speed control, Signal return |
| 25 | 3076 (YE/WH) | Accelerator pedal position sensor, monitor 3 |
| 26 | 3091 (LB/BK) | Accelerator pedal position sensor, monitor 1 |
| 27 | - | not used |
| 28 | 307 (BK/YE) | Brake pressure switch (2B264), input |
| 29 | 3093 (WH/LB) | Accelerator pedal position sensor, Reference voltage 2 |
| 30 | 3090 (VT) | Generator/Battery indicator, control |
| 31 | 151 (LB/BK) | Speed control switch, input |
| 32 | 914 (TN/OG) | Standard Corporate Protocol (SCP) data + |
| 33 | 359 (GY/RD) | Signal return |
| 34 | 361 (RD) | Voltage supplied in Start and Run (overload protected) |
| 35 | 679 (GY/BK) | Vehicle Speed Sensor (VSS), signal |
| 36 | *224 (TN/WH) | Tow/Haul switch, signal |
| 36 | **306 (TN/LB) | Clutch pedal position switch |
| 37 | 3075 (YE) | Accelerator pedal position sensor, monitor 2 |
| 38 | 356 (DB/LG) | Barometric Absolute Pressure (BAP) sensor, monitor |

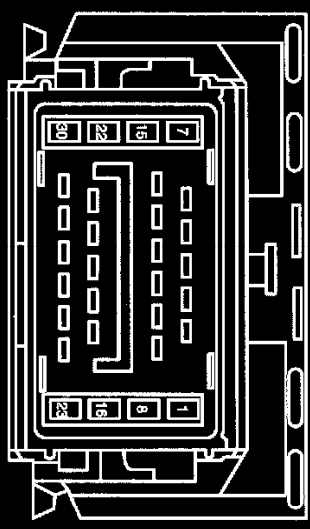
F46001

| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 39 | 107 (VT) | Module programming signal |
| 40 | 729 (FD/W-H) | Voltage supplied at all times (overload protected) |
| 41 | 358 (LG/BK) | Manifold Absolute Pressure (MAP) sensor, monitor |
| 42 | 967 (LB/RD) | Mass Air Flow (MAF) sensor (12B579), signal |
| 43 | 743 (GY) | Intake air temperature sensor, signal |
| 44 | 915 (PK/LB) | Standard Corporate Protocol (SCP) data - |
| 45 | 351 (BN/W-H) | Reference voltage |
| 46 | 361 (RD) | Voltage supplied in Start and Run (overload protected) |

C1381b (BK)

15525

Powertrain Control
Module (PCM)
(12A850)

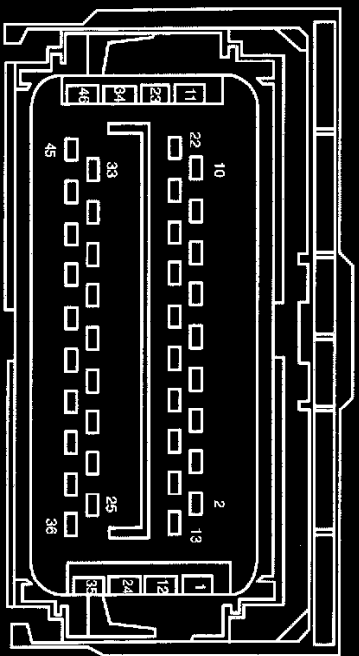


F30009

| Pin | Circuit | Circuit function |
|-----|--------------|---|
| 1 | 371 (PK/WH) | Reference voltage |
| 2 | 480 (VT/YE) | Pressure Control (PC-A) solenoid (7G383) |
| 3 | 324 (YEL/G) | Reversing lamps relay control |
| 4 | 483 (RD/WH) | Transfer case Neutral, signal |
| 5 | 911 (WH/LG) | Transmission Control Indicator Lamp (TCIL), control, (Tow/Haul) |
| 6 | - | not used |
| 7 | 1878 (YE/WH) | Electronic Pressure Control (EPC) solenoid, Power, (Tow/Haul) |
| 8 | - | not used |
| 9 | 237 (OG/YE) | Shift Solenoid Pressure Control A (SSPC-A) (7J136), control |
| 10 | 315 (VT/OG) | Shift Solenoid Pressure Control B (SSPC-B) (7J136), control |
| 11 | 971 (PK/BK) | Shift Solenoid Pressure Control C (SSPC-C) (7J136), control |
| 12 | 236 (BK/LG) | Shift Solenoid Pressure Control D (SSPC-D) (7J136), control |
| 13 | 125 (DB/WH) | Shift Solenoid Pressure Control E (SSPC-E) (7J136), control |
| 14 | 924 (BN/OG) | Torque Converter Clutch (TCC) solenoid (7J136), control |

| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 15 | - | not used |
| 16 | - | not used |
| 17 | 925 (WH/YE) | Pressure Switch A (PS-A) (7E440), signal |
| 18 | 966 (LB/PK) | Pressure Switch B (PS-B) (7E440), signal |
| 19 | 535 (LB/RD) | Pressure Switch C (PS-C) (7E440), signal |
| 20 | 912 (WH/RD) | Pressure Switch D (PS-D) (7E440), signal |
| 21 | 539 (PK/LB) | Pressure Switch E (PS-E) (7E440), signal |
| 22 | 570 (BK/WH) | Transmission Range Sensor Assembly (TR-P) (7H557), Ground |
| 23 | - | not used |
| 24 | - | not used |
| 25 | 199 (LB/YE) | Transmission Range Sensor Assembly (TR-P) (7H557), signal |
| 26 | 923 (OG/BK) | Transmission Fluid Temperature (TFT) sensor (7H141) signal |
| 27 | 134 (GY/OG) | Intermediate Shaft Speed (ISS) sensor (7M101), signal |
| 28 | 136 (DB/YE) | Output Shaft Speed (OSS) sensor (7H103), signal |
| 29 | 970 (DG/WH) | Turbine Shaft Speed (TSS) sensor (7M101), signal |
| 30 | 1875 (OG/WH) | Signal return |

C1381c (BK)
12B637
 Powertrain Control
 Module (PCM)
 (12A650)



| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 1 | 1183 (WH/YE) | Charge (including: ammeter/voltmeter), monitor |
| 2 | 552 (YE/RD) | Injection Pressure Regulator (IPR), control |
| 3 | 1086 (VT/OG) | Glow Plug System, signal |
| 4 | 1185 (YE) | Charge (including: ammeter/voltmeter), monitor, Generator, secondary |
| 5 | 466 (VT/OG) | not used |
| 6 | 229 (RD/OG) | Electronic fan clutch, signal |
| 7 | (BK) | not used |
| 8 | (BK) | not used |
| 9 | (BK) | not used |
| 10 | 41 (BK/LB) | Variable geometric turbo actuator, control |
| 11 | 43 (DB) | Variable geometric turbo actuator, common |
| 12 | 355 (GY/WH) | Electronic Throttle Control (ETC) motor +/- |
| 13 | - | not used |
| 14 | 228 (DB) | Electronic fan clutch, control |
| 15 | (BK) | not used |
| 16 | (BK) | not used |
| 17 | 1277 (WH/LG) | Glow plug control module (GPCM), signal |
| 18 | (BK) | not used |
| 19 | 54 (LG/YE) | Injector Driver Module (IDM), fuel delivery command |

| Pin | Circuit | Circuit function |
|-----|--------------|---|
| 20 | 56 (DB/OG) | Injector Driver Module (IDM), cylinder identification |
| 21 | (BK) | not used |
| 22 | 360 (BN/PK) | Engine cooling fan, Ground |
| 23 | 33 (WH/PK) | EGR valve actuator, control |
| 24 | 357 (YE/WH) | Electronic Throttle Control (ETC) motor +/- |
| 25 | 359 (GY/RD) | Signal return |
| 26 | 70 (LB/WH) | CAN Bus 2L |
| 27 | 553 (VT/LB) | Exhaust Back Pressure (EBP) sensor, signal |
| 28 | 878 (PK/YE) | Injector Driver Module (IDM), Communication |
| 29 | 812 (DB/LG) | Injection Control Pressure (ICP) sensor, signal |
| 30 | 349 (DB) | Crankshaft position sensor (6C315) + |
| 31 | 50 (RD) | Crankshaft position sensor (6B288) + |
| 32 | 3076 (YE/WH) | Coolant temperature sensor, signal |
| 33 | 34 (LB/OG) | EGR valve actuator, position sense |
| 34 | (BK) | not used |
| 35 | (BK) | not used |
| 36 | 351 (BN/WH) | Reference voltage |
| 37 | 69 (RD/LG) | CAN Bus 2H |
| 38 | 73 (OG/LB) | EGR throttle position sensor, monitor |

| Pin | Circuit | Circuit function |
|-----|-------------|---|
| 39 | (BK) | not used |
| 40 | (BK) | not used |
| 41 | 350 (GY) | Crankshaft position sensor (6C315) - |
| 42 | 57 (BK) | Ground, Drain wire |
| 43 | 49 (OG) | Camshaft position sensor (6B288) - |
| 44 | 354 (LG/RD) | Engine Oil Temperature (EOT) sensor, signal |
| 45 | 42 (RD/WH) | Air Charge Temperature (ACT) sensor, signal |
| 46 | 352 (BN/LG) | Electronic fan clutch, Reference voltage |

C2176 (BK)
14401
 Auxiliary Powertrain Control Module (APCM)

F04251

| Pin | Circuit | Circuit function |
|-----|-------------|--|
| 1 | 57 (BK) | Ground |
| 2 | 914 (TNOG) | Standard Corporate Protocol (SCP) data + |
| 3 | 640 (RD/YE) | Voltage supplied in Start and Run (overload protected) |
| 4 | 915 (PK/LB) | Standard Corporate Protocol (SCP) data - |