

Engine Control Module: Connector Views

C175a (BK)
12B637

Powertrain Control Module
(PCM) (AAA1001)
5.4L
6.8L

FEMALE

| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 1 | 191(LGBK) | Vapor management valve control |
| 2 | 1276 (WH/OG) | Heated Positive Crankcase Ventilation (PCV) element, control |
| 3 | 331 (PK/YE) | not used 6.8L |
| 4 | 439 (TN/LG) | A/C clutch relay, control |
| 5 | 48 | A/C pressure switch, signal |
| 6 | — | Drain wire - shield |
| 7 | — | not used |
| 8 | 1142 (WH/RD) | Coil On Plug (COP) 10, control |
| 9 | 1029 (WH/RD) | not used 5.4L |
| 10 | 1029 (WH/RD) | Coil On Plug (COP) 8, control |
| 11 | 1021 (LG/YE) | Coil On Plug (COP) 5, control |
| 12 | 1026 (PK/WH) | Coil On Plug (COP) 2, control |
| 13 | 1028 (WH/PK) | Coil On Plug (COP) 3, control |
| 14 | 114 (YE/BK) | not used 5.4L |
| 15 | 1030 (DG/VT) | Coil On Plug (COP) 9, control |
| 16 | 1025 (OG/YE) | Coil On Plug (COP) 4, control |
| 17 | 1027 (PV/LB) | Coil On Plug (COP) 6, control |
| 18 | 1024 (LG/WH) | Coil On Plug (COP) 7, control |
| 19 | 225 (BK/YE) | Coil On Plug (COP) 1, control |
| 20 | — | not used |
| 21 | — | Fuel rail temperature sensor signal |

| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 21 | — | not used |
| 22 | 743 (GY) | Intake Air Temperature (IAT) sensor (12A867), signal |
| 23 | — | not used |
| 24 | — | not used |
| 25 | 967 (LB/RD) | Mass Air Flow (MAF) sensor (12B579), signal |
| 26 | 969 (TN/LB) | Mass Air Flow (MAF) sensor (12B579), signal, return |
| 27 | 293 (YE/LB) | Engine Oil Temperature (EOT) sensor, signal |
| 28 | — | not used 6.8L |
| 29 | 74 (GY/LB) | Heated Oxygen Sensor (HO2S) #11 (9F472), input |
| 30 | 94 (RD/BK) | Heated Oxygen Sensor (HO2S) #21 (9F472), input |
| 31 | 1274 (DG/WH) | Knock sensor #2, signal |
| 32 | 311 (DG/VT) | Knock sensor #2, signal + |
| 33 | 1289 (OG/LG) | Fuel rail pressure sensor signal |
| 34 | — | not used |
| 35 | 1835 (DB/YE) | Electronic Throttle Control (ETC) motor +/- |
| 36 | 556 (WH) | Fuel injector 2, control |
| 37 | 556 (BP/LB) | Fuel injector 4, control |
| 38 | 560 (LG/OG) | Fuel injector 6, control |
| 39 | 582 (LB) | Fuel injector 8, control |
| 40 | 1101 (GY/RD) | Fuel injector 10 (9F593) control |
| 41 | — | not used 5.4L |
| 42 | — | not used |

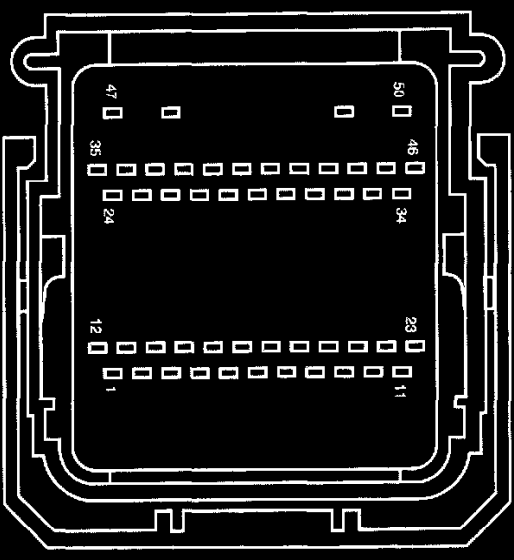
| Pin | Circuit | Circuit function |
|-----|--------------|---|
| 41 | 1102 (YEL/G) | Cylinder head temperature sensor signal |
| 42 | - | not used |
| 43 | 373 (WH/RD) | Charge Motion Control Valve (CMCV) monitor |
| | - | not used 6.8L |
| 44 | 365 (OG) | Camshaft position sensor 2 (6B289), signal |
| | - | not used 6.8L |
| 45 | 282 (DB/OG) | Camshaft position sensor 1 (6B289), signal |
| 46 | 350 (GY) | Crankshaft position sensor (6C315) - |
| 47 | 349 (DB) | Crankshaft position sensor (6C315) + |
| 48 | 1273 (YE) | Knock sensor #1, signal - |
| 49 | 310 (YE/RD) | Knock sensor #1, signal + |
| 50 | 367 (BF) | Charge Motion Control Valve (CMCV) control |
| | - | not used 6.8L |
| 51 | 1830 (RD/LG) | Electronic Throttle Control (ETC) motor -/+ |
| 52 | 555 (TN) | Fuel injector 1 (9F593), control |
| 53 | 557 (BN/YE) | Fuel injector 3 (9F593), control |
| 54 | 559 (TN/BK) | Fuel injector 5 (9F593), control |
| 55 | 561 (TN/RD) | Fuel injector 7 (9F593), control |
| 56 | 1100 (GY/BK) | Fuel injector 9 (9F593), control |
| | - | not used 5.4L |

| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 57 | 3073 (RD/W-) | Fuel rail temperature sensor reference voltage |
| 58 | 359 (GY/RD) | Signal return |
| 59 | 1948 (OG/LB) | Throttle Position Sensor (TPS) (9F391), signal return |
| 60 | 357 (YE/WH) | Throttle Position Sensor (TPS) (9F391), signal 2 |
| 61 | 355 (GY/WH) | Throttle Position sensor (TPS) (9F391), signal 1 |
| 62 | - | not used |
| 63 | - | not used |
| 64 | 1022 (DB/YE) | Intake Manifold Tuning Valve (IMTV) control |
| | - | not used 5.4L |
| 65 | 307 (BK/YE) | Brake pressure switch (2B264), input |
| 66 | 1945 (VT/WH) | Throttle Position Sensor (TPS) (9F391), reference voltage |
| 67 | 641 (VT/LB) | Variable camshaft timing (VCT) solenoid 1 (6B297), control |
| | - | not used 5.8L |
| 68 | 642 (DG/OG) | Variable camshaft timing (VCT) solenoid 2 (6B297), control |
| 68 | - | not used 5.8L |
| 69 | 387 (RD/WH) | Heated Oxygen Sensor (HO2S) #11 (9F472), heater |
| 70 | 388 (YEL/B) | Heated Oxygen Sensor (HO2S) #21 (9F472), heater |

C175b (BK)
12A581

Powertrain
Control Module
(PCM) (12A850)

*Automatic transmission
**Manual transmission



FEMALE

| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 1 | 239 (WH/OG) | Vehicle speed signal |
| 2 | 329 (PK) | Starter relay control |
| 3 | 791 (RD/PK) | Fuel tank pressure transducer sensor (9C052), signal |
| 4 | 3013 (GY/BK) | Accelerator pedal position sensor 3, power |
| 5 | 3835 (VE/WH) | Accelerator pedal position sensor 1, signal |
| 6 | 3011 (BK/OG) | Signal return |
| 7 | 2246 (OG/VE) | Power take-off (PTO) control signal |
| 8 | 810 (RD/LG) | Brake pedal position switch (13480), input |
| 9 | 2243 (OG/WH) | Power take off engage signal |
| 10 | 567 (LBYE) | Ground |
| 11 | 1908 (WH) | High speed CAN + |
| 12 | 926 (LB/OG) | Fuel pump driver module control signal |
| 13 | 91 (VT/WH) | EVAP canister vent control solenoid, control |

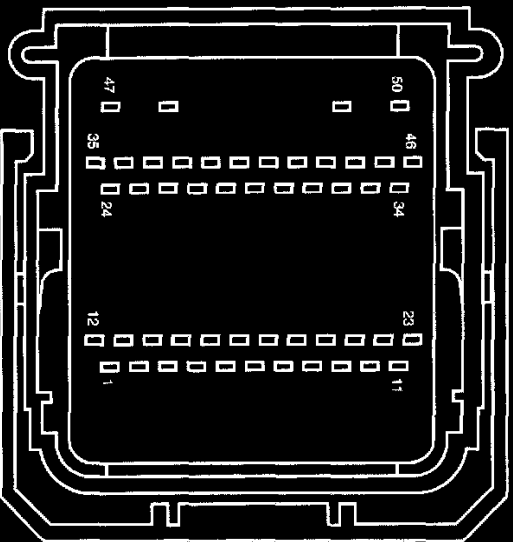
| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 14 | 1702 (GY/LB) | Heated Oxygen Sensor (HO2S) #13 (9G444), input |
| 15 | - | not used |
| 16 | 3010 (TN) | Voltage reference |
| 17 | 3012 (WH) | Accelerator pedal position sensor 2, signal |
| 18 | 3014 (BK/WH) | Accelerator pedal position sensor 3, return |
| 19 | 151 (LB/BK) | Speed control switch input |
| 20 | 1896 (GY) | Vehicle Emergency Messaging System (VEMS) airbag activation signal |
| 21 | 2022 (BN/OG) | Fuel pump driver module return |
| 22 | 493 (RD/WH) | Four-wheel drive control module neutral switch sense |
| 23 | 1909 (BK) | High speed CAN - |
| 24 | *324 (VE/LG) | Reversing lamps relay control |
| 25 | 76 (LG/WH) | Tachometer output |

| Pin | Circuit | Circuit function |
|-----|---------------|---|
| 26 | 2242 (OG) | Power take-off |
| 27 | * 224 (TN/WH) | Tow/haul switch signal |
| 28 | 3015 (WH/RD) | Accelerator pedal position sensor 3, signal |
| 29 | 679 (GY/BK) | Vehicle Speed Sensor (VSS), signal |
| 30 | 133 (BK) | Speed control switch return |
| 31 | - | not used |
| 32 | **906 (TN/LB) | Clutch pedal deactivation switch signal |
| 33 | - | not used |
| 34 | **92 (LB/YE) | Clutch pedal starter interlock switch signal |
| 35 | 361 (RD) | PCM power relay, switched power |
| 36 | 361 (RD) | PCM power relay, switched power |
| 37 | - | not used |
| 38 | 1706 (WH/BK) | Heated Oxygen Sensor (HO2S), #13 (9G444), return |
| 39 | - | not used |
| 40 | 3074 (BK/OG) | Fuel tank pressure transducer sensor, voltage reference |
| 41 | 1708 (RD/LG) | Signal return |
| 42 | 2244 (OG/LB) | Power take-off status |
| 43 | - | not used |
| 44 | 107 (VT) | Flash EE prom module programming signal (FEPS) |
| 45 | 1683 (DG) | Voltage supplied at all times (overload protected) |
| 46 | 1146 (LG/RD) | Transmission range, park signal |
| 47 | 570 (BK/WH) | Ground |
| 48 | 570 (BK/WH) | Ground |
| 49 | 570 (BK/WH) | Ground |
| 50 | 570 (BK/WH) | Ground |

C175c (BK)

15525

Powertrain Control
Module (PCM)
(12A650)



FEMALE

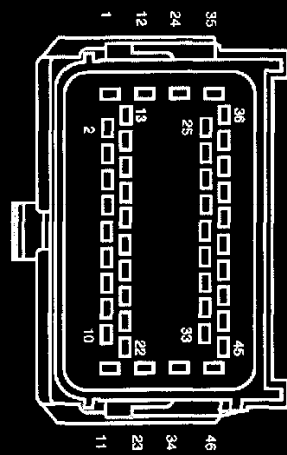
| Pin | Circuit | Circuit function |
|-----|---------------|--|
| 1 | *237 (OG/YE) | Shift Solenoid Pressure Control A (SSPC-A) (7J136), control |
| 2 | *315 (VT/OG) | Shift Solenoid Pressure Control B (SSP-C-B) (7J136), control |
| 3 | *136 (DB/YE) | Output Shaft Speed (OSS) sensor (7H103), signal |
| 4 | *134 (G/Y/OG) | Intermediate Shaft Speed (ISS) sensor (7M101), signal |
| 5 | - | not used |
| 6 | - | not used |
| 7 | - | not used |
| 8 | - | not used |
| 9 | - | not used |
| 10 | *971 (PK/BK) | Shift Solenoid Pressure Control C (SSPC-C) (7J136), control |
| 11 | *236 (BK/LG) | Shift Solenoid Pressure Control D (SSPC-D) (7J136), control |
| 12 | *125 (DB/WH) | Shift Solenoid Pressure Control E (SSPC-E) (7J136), control |

| Pin | Circuit | Circuit function |
|-----|---------------|--|
| 13 | *924 (BN/OG) | Torque Converter Clutch (TCC) solenoid (7J136), control |
| 14 | - | not used |
| 15 | *970 (DG/WH) | Turbine Shaft Speed (TSS) sensor (7H103), signal |
| 16 | - | not used |
| 17 | - | not used |
| 18 | - | not used |
| 19 | *199 (LB/YE) | Transmission range sensor assembly (TR-P) (7H557) signal |
| 20 | - | not used |
| 21 | - | not used |
| 22 | - | not used |
| 23 | *480 (VT/YE) | Pressure Control (PC-A) solenoid (7G389), control |
| 24 | **992 (RD/LG) | Heated Oxygen Sensor (HO2S) #12 (9G444), input |
| 25 | **393 (VT/LG) | Heated Oxygen Sensor (HO2S) #22 (9G444), input |

*Automatic transmission
**With box

| Pin | Circuit | Circuit function |
|-----|---------------|--|
| 26 | — | not used |
| 27 | — | not used |
| 28 | — | not used |
| 29 | *923 (OG/BK) | Transmission Fluid Temperature (TFT) sensor (7H141), signal |
| 30 | — | not used |
| 31 | — | not used |
| 32 | — | not used |
| 33 | — | not used |
| 34 | — | not used |
| 35 | — | not used |
| 36 | — | not used |
| 37 | — | not used |
| 38 | — | not used |
| 39 | *3087 (DGN/T) | Reference voltage, Transmission Range Sensor Assembly (TR-P) (7H141) |
| 40 | — | not used |
| 41 | 1704 (V/T/LG) | Signal return |
| 42 | — | not used |
| 43 | — | not used |
| 44 | — | not used |
| 45 | — | not used |
| 46 | — | not used |
| 47 | **389 (WH/BK) | Heated Oxygen Sensor (HO2S) #12 (9G444), heater |
| 48 | **390 (TN/YE) | Heated Oxygen Sensor (HO2S) #22 (9G444), heater |
| 49 | *1876 (YE/WH) | Shift solenoid VPWR |
| 50 | *1867 (OG) | Transmission Range Sensor Assembly (TR-P) (7H57), Ground |

C1381a (BK)
12A581
 Powertrain
 Control Module
 (PCM) (12A580)



Diesel only
 * Automatic transmission
 ** Manual transmission

| Pin | Circuit | Circuit function |
|-----|--------------|---|
| 1 | 76 (LG/WH) | Tachometer output |
| 2 | 331 (PK/YE) | A/C clutch relay, control |
| 3 | 463 (RD/WH) | Four wheel drive control module, neutral switch sense |
| 4 | 329 (PK) | Starter relay, control |
| 5 | 926 (LB/OG) | Fuel pump relay, control |
| 6 | 2246 (OG/YE) | Power take-off (PTO) control signal |
| 7 | 1857 (YE/WH) | Throttle position sensor feed |
| 8 | 439 (TN/LG) | A/C pressure switch, signal |
| 9 | 2248 (VT/LG) | Auto charge protect |
| 10 | 567 (LB/YE) | Ground |
| 11 | 570 (BK/WH) | Communication network ground (type 1 ground) |
| 12 | 2242 (OG) | Power take-off |

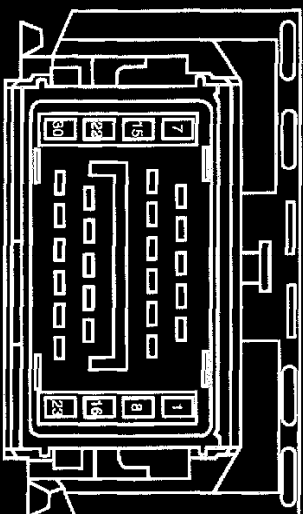
| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 13 | 1908 (WH) | High speed CAN + |
| 14 | 1909 (BK) | High speed CAN - |
| 15 | 643 (RD) | Water-in-fuel sensor, signal |
| 16 | 440 (TN/LG) | A/C head pressure sensor |
| 17 | 162 (LG/RD) | Parking brake switch, input |
| 18 | 810 (RD/LG) | Brake pedal position switch (13480), input |
| 19 | 787 (PK/BK) | Fuel pump power |
| 20 | 3014 (BK/WH) | Accelerator pedal position sensor 3, return |
| 21 | 968 (TN/LB) | Mass Air Flow (MAF) sensor (12B579) signal, return |
| 22 | 239 (WH/OG) | Vehicle speed signal |
| 23 | 570 (BK/WH) | Communication network ground (type 1 ground) |

| Pin | Circuit | Circuit function |
|-----|---------------|---|
| 24 | 133 (BK) | Speed control switch return |
| 25 | 3015 (WH/RD) | Accelerator pedal position sensor 3, signal |
| 26 | 3835 (YE/WH) | Accelerator pedal position sensor 1, signal |
| 27 | **92 (LB/YE) | Clutch pedal starter interlock switch, signal |
| 28 | 307 (BK/YE) | Brake pressure switch, input |
| 29 | 3013 (GY/BK) | Accelerator pedal position sensor 2, return |
| 30 | 3090 (VT) | Generator/Battery Indicator, control |
| 31 | 151 (LB/BK) | Speed control switch input |
| 32 | 2247 (OG/BK) | Customer Access |
| 33 | 359 (GY/RD) | Signal return |
| 34 | 361 (RD) | PCM power relay, switched power |
| 35 | 679 (GY/BK) | Vehicle Speed Sensor (VSS), signal |
| 36 | **224 (TN/WH) | Tow/haul switch, signal |
| | **306 (TN/LB) | Clutch pedal deactivation switch, signal |
| 37 | 3012 (WH) | Accelerator pedal position sensor 2, signal |
| 38 | 356 (DB/LG) | Barometric pressure sensor feed |
| 39 | 107 (VT) | Flash EEPROM Module Programming Signal (FEPS) |
| 40 | 1683 (DG) | Voltage supplied at all times (overhead protected) |
| 41 | 358 (LG/BK) | Manifold absolute pressure |
| 42 | 967 (LB/RD) | Mass Air Flow (MAF) sensor (12B579), signal |
| 43 | 743 (GY) | Intake air temperature (IAT) sensor (12A697), signal |
| 44 | 2245 (OG/RD) | Power take off voltage reference |
| 45 | 351 (BN/WH) | Power to engine sensors |
| 46 | 361 (RD) | PCM power relay, switched power |

C1381b (BK)

15525

Powertrain
Control Module
(PCM)
(12A650)



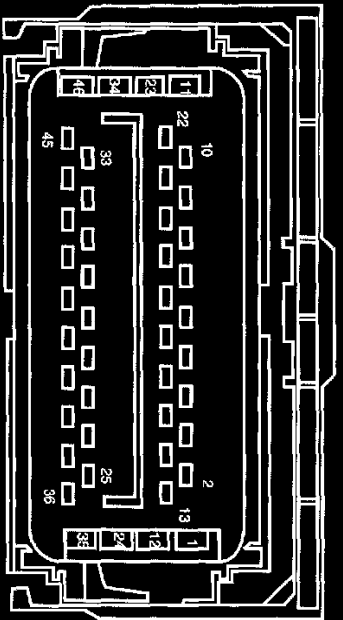
| Pin | Circuit | Circuit function |
|-----|--------------|---|
| 1 | 371 (PK/WH) | Reference voltage |
| 2 | 480 (VT/YE) | Pressure Control (PC-A) solenoid (7G383), control |
| 3 | 324 (YE/LG) | Reversing lamps relay, control |
| 4 | - | not used |
| 5 | 1146 (LG/RD) | not used |
| 6 | - | not used |
| 7 | 1876 (YE/WH) | Shift solenoid VPWR |
| 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 (DG/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 | - | not used |
| 18 | - | not used |
| 19 | - | not used |
| 20 | - | not used |
| 21 | - | not used |
| 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 (TFI) 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) (12A630)



| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 1 | 1183 (WH/YE) | Generator/battery charge control |
| 2 | 552 (YE/RD) | Injection Pressure Regulator (IPR), control |
| 3 | 1086 (VT/OG) | Glow Plug System, signal |
| 4 | 1185 (YE) | Generator/battery charge control (with dual generators) |
| 5 | - | not used |
| 6 | 229 (RD/OG) | Electronic fan clutch, signal |
| 7 | - | not used |
| 8 | - | not used |
| 9 | - | not used |
| 10 | 43 (DB) | Variable geometric turbo actuator, common |
| 11 | 41 (BK/LB) | Variable geometric turbo actuator, control |
| 12 | - | not used |
| 13 | - | not used |
| 14 | 228 (DB) | Electronic fan clutch, control |
| 15 | - | not used |
| 16 | - | not used |
| 17 | 1277 (WH/LG) | Glow plug control module (GPCM), signal |
| 18 | - | not used |
| 19 | 54 (LG/YE) | Fuel Injector Control Module (FICM), fuel delivery command |
| 20 | 56 (DB/OG) | Fuel Injector Control Module (FICM), cylinder identification |
| 21 | - | not used |
| 22 | 360 (BN/PK) | Engine cooling fan, Ground |

| Pin | Circuit | Circuit function |
|-----|--------------|--|
| 23 | 33 (WH/PK) | EGR valve actuator, control |
| 24 | - | not used |
| 25 | 369 (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) | Fuel Injector Control Module (FICM), communication |
| 29 | 812 (DB/LG) | Injection Control Pressure (ICP) sensor, signal |
| 30 | 349 (DB) | Crankshaft position sensor (6C315) + |
| 31 | 50 (RD) | Camshaft position sensor (6B288) + |
| 32 | 3076 (YE/WH) | Coolant temperature sensor, signal |
| 33 | 34 (LB/OG) | EGR valve actuator, position sense |
| 34 | - | not used |
| 35 | - | not used |
| 36 | 351 (BN/WH) | Reference voltage |
| 37 | 69 (RD/LG) | CAN Bus 2H |
| 38 | - | not used |
| 39 | - | not used |
| 40 | - | not used |
| 41 | 350 (GY) | Crankshaft position sensor (6C315) - |
| 42 | 57 (BK) | Ground |
| 43 | 49 (OG) | Camshaft position sensor (6B288) - |
| 44 | 354 (LG/RI) | 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 |