

## ACCELERATOR PEDAL INSTALLATION INSTRUCTIONS

### (GREEN Wire Hook Up)

IF YOU WISH TO INSTALL THE SENTINEL EXHAUST BRAKE FOR MANUAL USE ONLY, connect the GREEN wire to the ground. When the GREEN wire is connected to a ground the Sentinel Exhaust Brake will open and close only with the dash switch.

### AUTOMATION INSTALLATION INSTRUCTIONS

1. Identify the Accelerator Pedal Position (APP) Sensor wire (using the diagrams below) and locate a good space on the APP Sensor wire to splice into.
2. Cut approximately ½ inch of the insulation on the APP Sensor wire and evenly split the wires apart. (Do not cut the wire)
3. Strip approximately ½ inch of the insulation off the end of the GREEN wire, thread and twist the GREEN wire into the APP Sensor wire. (Solder connection if desires) (An extension wire may need to be used to reach the APP wire in certain applications.)
4. Wrap connection with harness tape and secure wires to make sure the wires will not chafe or dangle.

**Note:** If the vehicle has a mechanical fuel pedal you should have received the BM1001 G controller. To automate the BM1001 G controller hook the GREEN wire to a microswitch on the fuel linkage, using a 12-volt power circuit. If you wish to use the BM1001 G controller manually do not connect the GREEN wire.

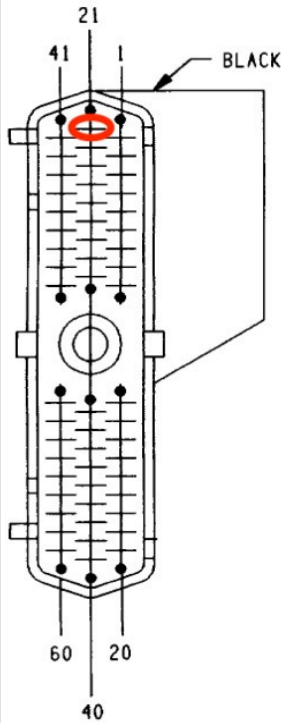
# ACCELERATOR PEDAL POSITION (APP) SENSOR DIAGRAMS

## DODGE

### 1994 –1995 5.9L Cummins

**C135**

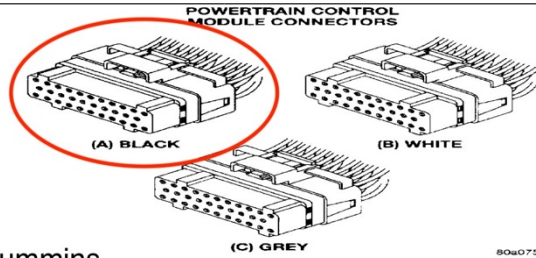
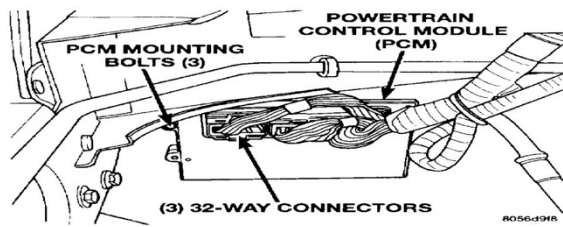
94-95 Dodge  
5.9 cummins



POWERTRAIN  
CONTROL  
MODULE

| CAV | CIRCUIT      | FUNCTION                          |
|-----|--------------|-----------------------------------|
| 1   | K1 20DG/RD   | WATER-IN-FUEL                     |
| 2   | —            | —                                 |
| 3   | A14 16RD/WT  | FUSED B+                          |
| 4   | K4 20BK/LB   | SENSOR GROUND                     |
| 5   | —            | —                                 |
| 6   | K6 20VT/WT   | 5V OUTPUT                         |
| 7   | K7 20OR      | 8V SUPPLY                         |
| 8   | —            | —                                 |
| 9   | F18 18LG/BK  | FUSED IGN SW OUTPUT (START/RUN)   |
| 10  | T6 20OR/WT   | TRANS OD SWITCH OUTPUT            |
| 11  | Z12 16BK/TN  | GROUND                            |
| 12  | Z12 16BK/TN  | GROUND                            |
| 13  | —            | —                                 |
| 14  | —            | —                                 |
| 15  | S22 20OR/BK  | HEATED INTAKE AIR RELAY 2         |
| 16  | S21 20YL/BK  | HEATED INTAKE AIR RELAY 1         |
| 17  | —            | —                                 |
| 18  | —            | —                                 |
| 19  | —            | —                                 |
| 20  | K20 18DG     | GENERATOR FIELD CONTROL           |
| 21  | K21 16BK/RD  | INTAKE AIR TEMPERATURE SENSOR     |
| 22  | K22 20OR/DB  | THROTTLE POSITION SENSOR          |
| 23  | —            | —                                 |
| 24  | K24 20GY/BK  | ENGINE SPEED SENSOR               |
| 25  | D21 20PK     | SCI TRANSMIT                      |
| 26  | —            | Text                              |
| 27  | C20 18BR     | A/C REQUEST SIGNAL                |
| 28  | —            | —                                 |
| 29  | V40 20WT/PK  | STOP LAMP SWITCH OUTPUT           |
| 30  | T41 20BK/WT  | PARK/NEUTRAL POSITION SW SENSE    |
| 30  | Z12 20BK/TN  | GROUND                            |
| 31  | G14 18PK/BK  | TRANSMISSION TEMP LAMP DRIVER     |
| 32  | G3 20BK/PK   | MALFUNCTION INDICATOR LAMP        |
| 33  | V36 20TN/RD  | VEHICLE SPEED CONTROL-VACUUM SIG  |
| 34  | C13 20DB/OR  | A/C COMPRESSOR CLUTCH RLY CONTROL |
| 35  | G86 18TN/OR  | WATER-IN-FUEL                     |
| 36  | G85 18OR/BK  | WAIT-TO-START                     |
| 37  | T18 20LG/OR  | TRANSMISSION CONTROL MODULE       |
| 38  | —            | —                                 |
| 39  | —            | —                                 |
| 40  | —            | —                                 |
| 41  | —            | —                                 |
| 42  | T54 16VT     | TRANSMISSION TEMPERATURE SENSOR   |
| 43  | G21 20GY/LB  | TACHOMETER SIGNAL                 |
| 44  | —            | —                                 |
| 45  | D20 20LG     | SCI RECEIVE                       |
| 46  | —            | —                                 |
| 47  | G7 20WT/OR   | VEHICLE SPEED SENSOR SIGNAL       |
| 48  | V31 20BR/RD  | VSC SWITCH - SET                  |
| 49  | V32 20YL/RD  | VSC SWITCH OUTPUT (ON)            |
| 50  | V33 20WT/LG  | VSC SWITCH RESUME/ACCEL           |
| 51  | K51 20DB/YL  | ASD/FUEL PUMP RELAY CONTROL       |
| 52  | —            | —                                 |
| 53  | V35 20LG/RD  | VEHICLE SPEED CONTROL VENT SIGNAL |
| 54  | K54 20OR/BK  | TCC SOLENOID CONTROL              |
| 55  | T60 20BR     | OVERDRIVE SOLENOID CONTROL        |
| 56  | —            | —                                 |
| 57  | A142 16DG/OR | ASD RELAY OUTPUT                  |
| 58  | —            | —                                 |
| 59  | —            | —                                 |
| 60  | —            | —                                 |

# 1996-2002 5.9 Cummins



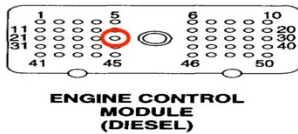
## 96-02 Dodge 5.9 Cummins

| CAV        | CIRCUIT          | FUNCTION                               |
|------------|------------------|--|
| A2         | F18 LG/BK        | Fused Ignition Switch Output           |
| A4         | K4 BK/LB         | Sensor Ground                          |
| A5         | T41 BK/WT        | P/N Position Switch Sense              |
| A7         | S21 YL/BK        | Air Intake Heater Relay #1 Control     |
| A8         | K24 GY/BK        | Crank Position Sensor Signal           |
| A9         | S22 OR/BK        | Air Intake Heater Relay #2 Control     |
| A15        | K21 BK/RD        | Intake Air Temp Sensor Signal          |
| A16        | K2 TN/BK         | Engine Coolant Temp Sensor Signal      |
| A17        | K6 VT/WT         | 5-Volt Supply                          |
| A22        | A14 RD/WT        | Fused B(+)                             |
| <b>A23</b> | <b>K22 OR/DB</b> | <b>Throttle Position Sensor Signal</b> |
| A27        | K1 DG/RD         | Water-In-Fuel Sensor Signal            |
| A31        | Z12 BK/TN        | Ground                                 |
| A32        | Z12 BK/TN        | Ground                                 |
| B1         | K54 VT           | Trans Temp Sensor Signal               |
| B8         | K88 VT/WT        | Governor Pressure Solenoid Control     |
| B10        | K20 DG           | Generator Field Driver                 |
| B11        | K54 OR/BK        | TCC Solenoid Control                   |
| B20        | G85 OR/BK        | Wait to Start Lamp Driver              |
| B21        | T60 BR           | Overdrive Solenoid Control             |
| B25        | T13 DB/BK        | Output Shaft Speed Sensor Ground (-)   |
| B27        | G7 WT/OR         | Vehicle Speed Sensor Signal            |
| B28        | T14 LG/BK        | Output Shaft Speed Sensor Signal (+)   |

| CAV | CIRCUIT    | FUNCTION                       |
|-----|------------|--------------------------------|
| B29 | T25 LG/WT  | Governor Pressure Signal       |
| B30 | K30 PK     | Transmission Relay Control     |
| B31 | K7 OR      | 5-Volt Supply                  |
| B32 | K35 GY/YL  | EGR Solenoid Control           |
| C1  | C13 DB/OR  | A/C Comp Clutch Relay Control  |
| C3  | K51 DB/YL  | Auto Shutdown Relay Control    |
| C4  | V36 TN/RD  | S/C Vacuum Solenoid Control    |
| C5  | V35 LG/RD  | S/C Vent Solenoid Control      |
| C6  | T18 LG/OR  | Overdrive Off Lamp Driver      |
| C7  | G14 PK/BK  | Trans Temp Lamp Driver         |
| C11 | V32 YL/RD  | Switched SC Power Supply       |
| C12 | A142 DG/OR | Auto Shutdown Relay Output     |
| C13 | T6 OR/WT   | Overdrive Off Switch Sense     |
| C15 | K118 PK/YL | Battery Temp Sensor Signal     |
| C16 | G12 TN/YL  | Generator Lamp Driver          |
| C17 | G3 BK/PK   | MIL (Check Engine) Lamp Driver |
| C18 | G86 TN/OR  | Water-in-Fuel Lamp Driver      |
| C22 | C20 BR     | A/C Request Signal             |
| C23 | C90 LG     | A/C Select Signal              |
| C24 | V40 WT/PK  | Brake Switch Sense             |
| C25 | K125 WT/DB | Generator Field Source (+)     |
| C27 | D21 PK/DB  | SCI Transmit                   |
| C29 | D20 DG     | SCI Receive                    |
| C31 | G21 GY/LB  | Tachometer Signal              |
| C32 | V37 RD/LG  | Speed Control Switch Signal    |

The content of this image reflects the changes called out by TSB 26-01-00.

## 99-02 Dodge 5.9 Cummins

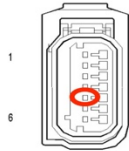


| CAV       | CIRCUIT             | FUNCTION  |
|-----------|---------------------|---|
| 1         | H104 18BR/OR        | IDLE VALIDATION SWITCH NO. 1                    |
| 2         | K244 20YL           | CUMMINS BUS (+)                                 |
| 3         | K6 18VT/WT          | 5V SUPPLY                                       |
| 4         | K14 18BK/DB         | SENSOR GROUND                                   |
| 5         | F18 18LG/BK         | FUSED IGNITION SWITCH OUTPUT (ST-RUN)           |
| 6         | G60 18GY/BK         | ENGINE OIL PRESSURE SENSOR SIGNAL               |
| 7         | K21 18BK/RD         | INTAKE AIR TEMPERATURE SIGNAL                   |
| 8         | G12 18GY/RD         | MANIFOLD AIR PRESSURE SENSOR SIGNAL             |
| 9         | K46 18TN/YL         | CAMSHAFT POSITION SENSOR SIGNAL                 |
| 10        | K7 18OR             | 5V SUPPLY                                       |
| 11        | K104 18BK/LB        | SENSOR GROUND                                   |
| 12        | K246 20LG           | CUMMINS BUS (-)                                 |
| 13        | K242 20YL/PK        | DATALINK (+) FUEL INJECTOR PUMP                 |
| 14        | K2 18TN/BK          | ENGINE COOLANT TEMPERATURE SENSOR SIGNAL        |
| 15        | K135 18YL/WT        | TRANSFER PUMP POWER SUPPLY                      |
| 16        | H105 18LG/DB        | IDLE VALIDATION SWITCH NO. 2                    |
| 17        | K124 18GY           | CRANKSHAFT POSITION SENSOR SIGNAL               |
| 18        | K48 18DG            | FUEL INJECTION PUMP SYNC SIGNAL                 |
| 19        | -                   | -   |
| 20        | -                   | -   |
| 21        | K1 18DG/RD          | WATER-IN-FUEL SENSOR SIGNAL                     |
| 22        | -                   | -   |
| 23        | K240 20LG/PK        | DATALINK (-) FUEL INJECTOR PUMP                 |
| 24        | -                   | -   |
| <b>25</b> | <b>H102 18LB/BK</b> | <b>ACCELERATOR PEDAL POSITION SENSOR SIGNAL</b> |
| 26        | G113 18OR           | PTO SWITCH SENSE                                |
| 27        | -                   | -   |
| 28        | K22 18OR/DB         | ACCELERATOR PEDAL POSITION SENSOR SIGNAL        |
| 29        | S21 18YL/BK         | AIR INTAKE HEATER RELAY NO. 1 CONTROL           |
| 30        | Z12 18BK/TN         | GROUND  |
| 31        | H101 18DB/WT        | ACCELERATOR PEDAL POSITION SENSOR SUPPLY        |
| 32        | H103 18BK/YL        | ACCELERATOR PEDAL POSITION SENSOR GROUND        |
| 33        | K45 18L/RD          | FUEL SHUT-OFF SIGNAL                            |
| 34        | K44 18VT/OR         | LOW IDLE SELECT                                 |
| 35        | K135 18YL/WT        | TRANSFER PUMP POWER SUPPLY                      |
| 36        | K131 18BR/WT        | FUEL INJECTOR PUMP RELAY CONTROL                |
| 37        | G85 18OR/BK         | WAIT-TO-START WARNING INDICATOR DRIVER          |
| 38        | D21 18PK/DB         | SCI TRANSMIT                                    |
| 39        | D20 18DG            | SCI RECEIVE                                     |
| 40        | D2 18WT/BK          | CCD BUS (-)                                     |
| 41        | D1 18VT/BR          | CCD BUS (+)                                     |
| 42        | K247 20LB/RD        | CUMMINS BUS SHIELD                              |
| 43        | -                   | -   |
| 44        | K243 20OR/BR        | DATALINK SHIELD FUEL INJECTOR PUMP              |
| 45        | K24 20GY/BK         | CRANKSHAFT POSITION SENSOR SIGNAL               |
| 46        | -                   | -   |
| 47        | S22 18OR/BK         | AIR INTAKE HEATER RELAY NO. 2 CONTROL           |
| 48        | A14 18RD/WT         | FUSED B(+)                                      |
| 49        | Z12 18BK/TN         | GROUND  |
| 50        | A14 18RD/WT         | FUSED B(+)                                      |

# 2003–2005 5.9L Cummins

## Accelerator Pedal Position Sensor **Manual Transmission**

2003 - 2005 Dodge 5.9L Cummins

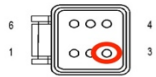


ACCELERATOR PEDAL POSITION SENSOR (DIESEL M/T)

Plug in under the batter box

| ACCELERATOR PEDAL POSITION SENSOR (DIESEL M/T) - 6 WAY |              |                          |
|--|--------------|--------------------------|
| CAV  | CIRCUIT      | FUNCTION                 |
| 1  | K29 20WT/BR  | APPS NO. 2 SIGNAL        |
| 2  | K854 20VT/BR | APPS NO. 2 5 VOLT SUPPLY |
| 3  | K852 20BR/LB | APPS NO. 1 5 VOLT SUPPLY |
| 4  | K400 20BR/VT | APPS NO. 2 RETURN        |
| 5  | K23 20BR/WT  | APPS NO. 1 SIGNAL        |
| 6  | K167 20BR/YL | APPS NO. 1 RETURN        |

## Accelerator Pedal Position Sensor **Automatic Transmission**



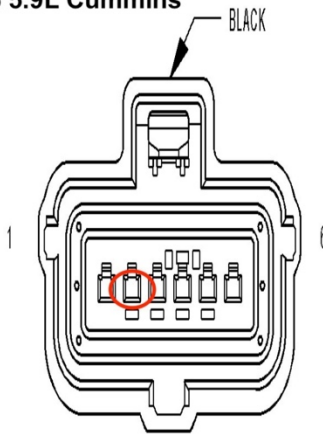
ACCELERATOR PEDAL POSITION SENSOR (DIESEL A/T)

Plug in under the batter box

| ACCELERATOR PEDEL POSITION SENSOR (DIESEL A/T) - 6 WAY |              |                                 |
|--|--------------|---------------------------------|
| CAV  | CIRCUIT      | FUNCTION                        |
| 1  | K914 1BRD/WT | SENSOR GROUND                   |
| 2  | K566 180R/BR | NOT IDLE SWITCH                 |
| 3  | K22 18BR/WT  | TP SIGNAL                       |
| 4  | K922 18LG/OR | THROTTLE POSITION SENSOR RETURN |
| 5  | K851 18VT/PK | 5-VOLT SUPPLY                   |
| 6  | K565 180R    | IDLE SWITCH                     |

# 2006 5.9L Cummins

## 2006 5.9L Cummins

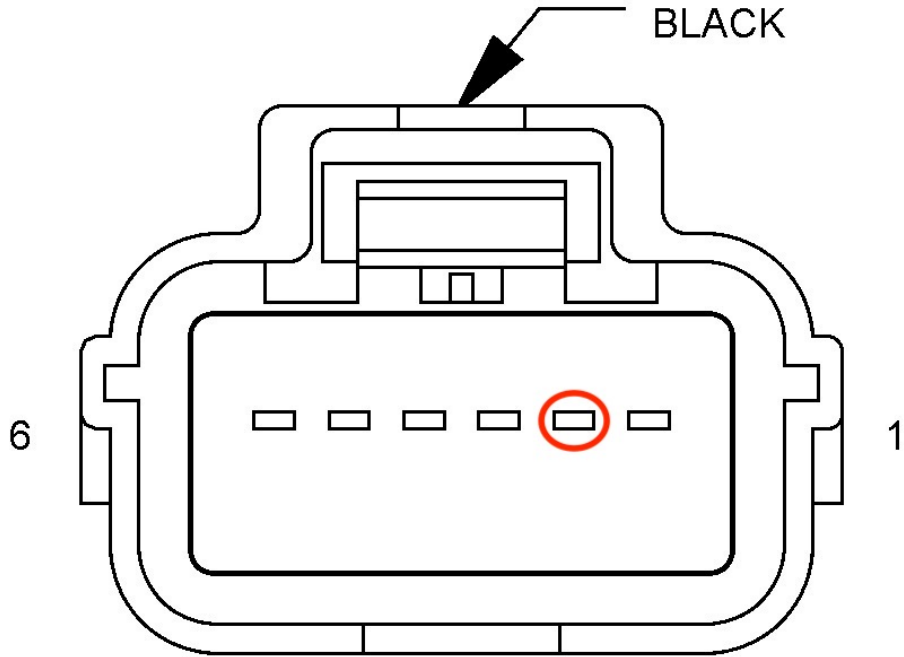


SENSOR-ACCELERATOR PEDAL POSITION (5.7L/DIESEL)

## SENSOR-ACCELERATOR PEDAL POSITION (5.7L/DIESEL) - BLACK 6 WAY

| CAV | CIRCUIT               | FUNCTION                 |
|-----|-----------------------|--------------------------|
| 1   | F856 20YL/PK          | 5 VOLT SUPPLY            |
| 1   | K854 20VT/BR (DIESEL) | 5 VOLT SUPPLY            |
| 2   | K29 20WT/BR           | <u>APPS NO. 2 SIGNAL</u> |
| 3   | K400 20BR/VT          | APPS NO. 2 RETURN        |
| 4   | K167 20BR/YL          | APPS NO. 1 RETURN        |
| 5   | K23 20BR/WT           | APPS NO. 1 SIGNAL        |
| 6   | F855 20PK/YL          | 5 VOLT SUPPLY            |
| 6   | K852 20BR/VT (DIESEL) | 5 VOLT SUPPLY            |

2007-2008 5.9L Cummins  
2007-2024 6.7L Cummins



2007-08 5.9Cummins  
2007-24 6.7Cummins

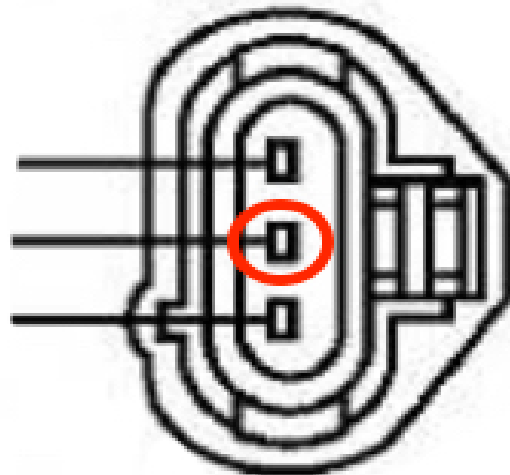
**SENSOR-  
ACCELERATOR  
PEDAL  
POSITION**

**PIN #2**

FORD

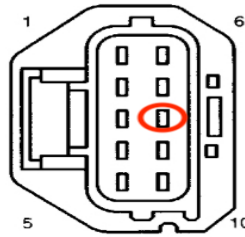
95-2001 7.3L

**PIN #2**



01 - 03  
7.3 L

**PIN #8**

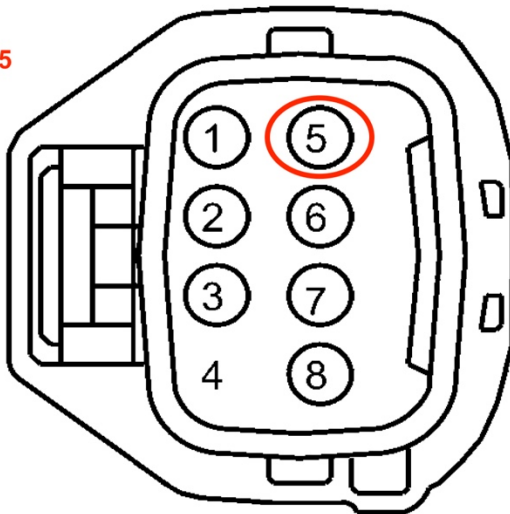


F10105

| Pin      | Circuit            | Circuit function                                       |
|----------|--------------------|--|
| 1        | –                  | not used   |
| 2        | –                  | not used   |
| 3        | –                  | not used   |
| 4        | –                  | not used   |
| 5        | –                  | not used   |
| 6        | 640 (RD/YE)        | Voltage supplied in Start and Run (overload protected) |
| 7        | 1285 (RD/LG)       | position sense   |
| <b>8</b> | <b>355 (GY/WH)</b> | <b>signal +</b>  |
| 9        | 357 (YE/WH)        | signal –   |
| 10       | 351 (BN/WH)        | Reference, voltage                                     |

2003 - 2010 FORD 6.0L & 6.4L

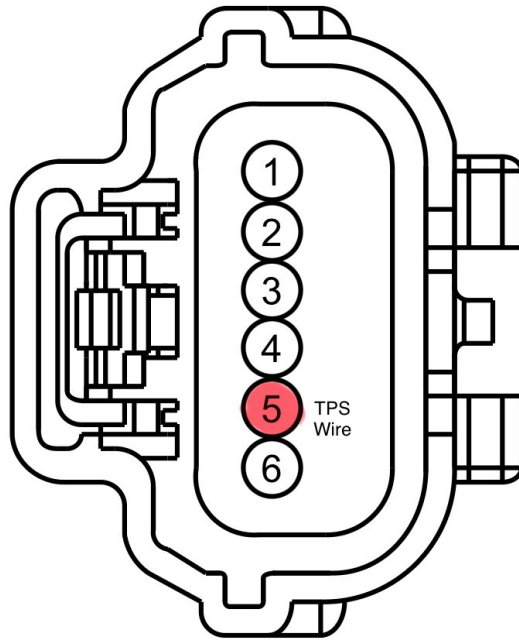
**PIN #5**



| Pin      | Circuit              | Gauge | Circuit Function  | Qualifier |
|----------|----------------------|-------|---|-----------|
| 1        | RE137 (YE-GN)        | 20    | CTRL MOD. - POWERTRAIN # ACCELERATOR PEDAL POSITION SENSOR 2 (APP2RTN)  |           |
| 2        | VE701 (YE-OG)        | 20    | SENSOR - ACCELERATOR PEDAL POSITION # 1 (APP1)                          |           |
| 3        | RE136 (VT-GN)        | 20    | CTRL MOD. - POWERTRAIN # ACCELERATOR PEDAL POSITION SENSOR 1 (APP1RTN)  |           |
| 4        | *                    | *     | not used  |           |
| <b>5</b> | <b>VE702 (BU-WH)</b> | 20    | <b>SENSOR - ACCELERATOR PEDAL POSITION # 2 (APP2)</b>                   |           |
| 6        | LE136 (GN-OG)        | 20    | CTRL MOD. - POWERTRAIN # ACCELERATOR PEDAL POSITION SENSOR 1 (APP1VREF) |           |
| 7        | LE137 (BU-GY)        | 20    | CTRL MOD. - POWERTRAIN # ACCELERATOR PEDAL POSITION SENSOR 2 (APP2VREF) |           |
| 8        | VE703 (GN-WH)        | 20    | SENSOR - ACCELERATOR PEDAL POSITION # 3 (APP3)                          | Gasoline  |
| 8        | VE703 (GN-WH)        | 20    | Not used  | Diesel    |

2011- 2024 6.7 L





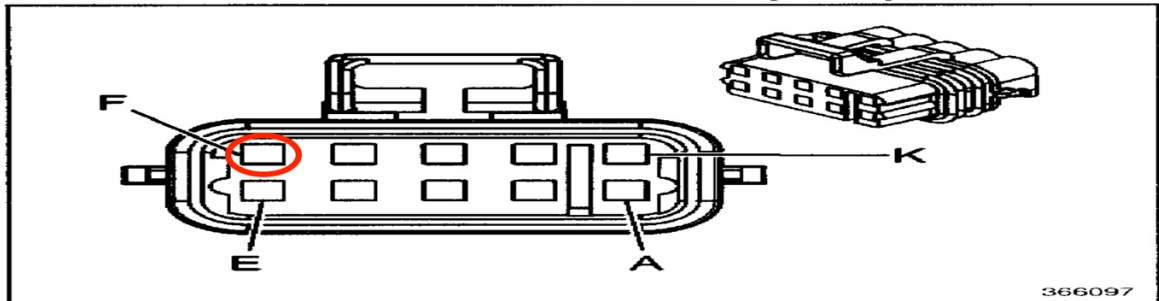
| Pin | Circuit          | Gauge | Circuit Function  | Qualifier   | Terminal Part Number |
|-----|------------------|-------|---|-------------|----------------------|
| 1   | LE136<br>(GN-OG) | 22    | CTRL MOD. -<br>POWERTRAIN #<br>ACCELERATOR PEDAL<br>POSITION SENSOR 1<br>(APP1VREF) |             | 7S4T-14474-<br>BB    |
| 2   | VE701<br>(YE-OG) | 22    | SENSOR - ACCELERATOR<br>PEDAL POSITION # 1<br>(APP1)                                |             | 7S4T-14474-<br>BB    |
| 3   | RE136<br>(VT-GN) | 22    | CTRL MOD. -<br>POWERTRAIN #<br>ACCELERATOR PEDAL<br>POSITION SENSOR 1<br>(APP1RTN)  |             | 7S4T-14474-<br>BB    |
| 4   | RE137<br>(YE-GN) | 22    | CTRL MOD. -<br>POWERTRAIN #<br>ACCELERATOR PEDAL<br>POSITION SENSOR 2<br>(APP2RTN)  |             | 7S4T-14474-<br>BB    |
| 5   | VE702<br>(BU-WH) | 22    | <u>SENSOR - ACCELERATOR<br/>PEDAL POSITION # 2<br/>(APP2)</u>                       | TPS<br>Wire | 7S4T-14474-<br>BB    |
| 6   | LE137<br>(BU-GY) | 22    | CTRL MOD. -<br>POWERTRAIN #<br>ACCELERATOR PEDAL<br>POSITION SENSOR 2<br>(APP2VREF) |             | 7S4T-14474-<br>BB    |

**GMC / CHEVROLET**



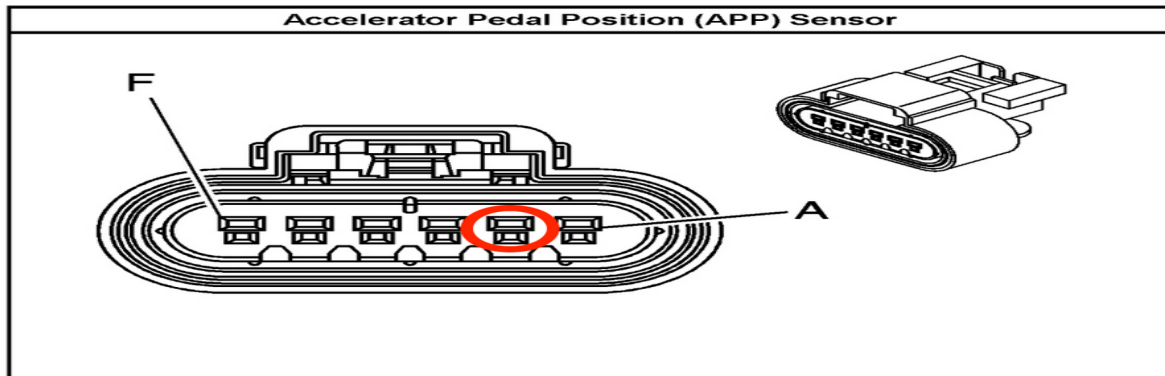
2001-2005 6.6L

**Accelerator Pedal Position (APP) Sensor**



| Connector Part Information |               | <ul style="list-style-type: none"> <li>• 15318071</li> <li>• 10-Way F Metri-pack 150 Series (GRY)</li> </ul> |                            |
|----------------------------|---------------|--|----------------------------|
| Pin                        | Wire Color    | Circuit No.  | Function                   |
| A                          | GRY           | 1273   | Low Reference              |
| B                          | PPL           | 1272   | Low Reference              |
| C                          | LT BLU        | 1162   | APP Sensor 2 Signal        |
| D                          | TAN           | 1274   | 5 Volt Reference           |
| E                          | BRN           | 971  | Low Reference              |
| <b>F</b>                   | <b>DK BLU</b> | <b>1161</b>  | <b>APP Sensor 1 Signal</b> |
| G                          | WHT/BLK       | 1164   | 5 Volt Reference           |
| H                          | —             | —  | Not Used                   |
| J                          | YEL/BLK       | 975  | 5 Volt Reference           |
| K                          | DK GRN        | 1163   | APP Sensor 3 Signal        |

2006-2007.5 6.6L



| Connector Part Information  |             |             |                            |
|---|-------------|-------------|----------------------------|
| <ul style="list-style-type: none"> <li>• OEM: 15326830</li> <li>• Service: 88953153</li> <li>• Description: 6-Way F GT 150 Series (BK)</li> </ul> |             |             |                            |
| Pin   | Wire Color  | Circuit No. | Function                   |
| A   | PU          | 1272        | Low Reference              |
| <b>B</b>  | <b>L-BU</b> | <b>1162</b> | <b>APP Sensor 2 Signal</b> |
| C   | TN          | 1274        | 5-Volt Reference           |
| D   | WH/BK       | 1164        | 5-Volt Reference           |
| E   | D-BU        | 1161        | APP Sensor 1 Signal        |
| F   | BN          | 1271        | Low Reference              |