

# Supported Parameters and Functions by Manufacturer

## General Motors (non-CAN vehicles) – PT series gauges:

1. INTAKE AIR- Intake Air Temperature - \*\*
2. COOLANT TEMP- Engine Coolant Temperature \*\*
3. TRANS TEMP 1- Transmission Temperature for automatic gas vehicles
4. TRANS TEMP 2- Trans temp for some vehicles made from '94-'97.
4. RPM- engine Revolutions Per Minute \*\*
5. MAF SENSOR LB/M- Mass Air Flow (lbs/min) \*\*
6. MAF FREQUENCY- raw Mass Air Flow sensor output (frequency)
7. MAF FREQUENCY 2- raw MAF sensor output for the Cobalt SS and Redline
8. MAP SENSOR- Manifold Air Pressure (kPa) \*\*
9. BOOST – Intake vacuum/boost displayed in inHg/PSI. Corrected by altitude entry or barometer\*\*
9. THROTTLE POS. PCT- Throttle Position percentage (0-100%)
10. THROTTLE VOLTS- Throttle Position sensor output (0-5 volts)
11. MILES PER HOUR- Miles Per Hour \*\*
12. KNOCK RETARD- Knock Retard (degrees) for most GM vehicles
13. KNOCK RETARD 2- used for KR value of '94-'97 LT1's and some 96/97 V8's.
14. KNOCK RETARD 3- used for knock retard value of the Cobalt SS SC and Redline
15. IGNITION ADVANCE- ignition timing advance
16. PULSE WIDTH- injector #1 pulse width (4&6 cylinder engines)
17. SHORT TRIM B1-short term fuel trim bank#1
18. SHORT TRIM B2-short term fuel trim bank#2
19. LONG TRIM B1-long term fuel trim bank#1
20. LONG TRIM B2-long term fuel trim bank#2
21. OXYGEN SENSOR B1-O2 bank 1 sensor 1 in millivolts
22. OXYGEN SENSOR B2-O2 bank 2 sensor 1 in millivolts
23. OXYGEN SENSOR – alternate O2 sensor parameter, rarely supported.
24. RUN TIME MINS- engine run time is tenths of seconds since last engine start \*\*
25. BATTERY VOLTAGE- Alternator/battery output voltage \*\*
26. IAC POSITION- Idle Air Control counts (position of Idle Air Control valve)
27. PULSE WIDTH B1-injector Pulse Width for bank 1 (8 cylinder engines)
28. PULSE WIDTH B2-injector Pulse Width for bank 2 (8 cylinder engines)
29. ENGINE LOAD- calculated Engine Load (0-100%) \*\*
30. ENGINE OIL PRESSURE (some 8 cylinder engines) \*\*
31. INTAKE AIR 2 – Intake Air Temp. downstream of intercooler (some supercharged applications such as the Cobalt SS, Ion Redline).
32. TRANS TEMP AL- Allison transmission temp, Duramax and Workhorse
33. TORQUE CONVERTER SLIP AL- Allison transmission converter slip, Duramax and Workhorse
34. TQ TO TRANS AL- Engine torque delivered to trans, Duramax and Workhorse
35. INJECTOR RAIL PRESSURE DESIRED DM- Duramax
36. INJECTOR RAIL PRESSURE ACTUAL DM- Duramax
37. THROTTLE PCT DM- Throttle percentage- Duramax
38. THROTTLE VOLTS DM- Throttle sensor voltage- Duramax
39. FUEL LEVEL DM- Duramax
40. INJECTOR FLOW RATE DM- Duramax
41. Desired Turbo Vane Position- 2004+ Duramax
42. Actual Turbo Vane Position- 2004+ Duramax
43. Pilot Injector Pulse Width- pilot injector pulse width in msec. - Duramax
44. Main Injector Pulse Width- main injector pulse width in msec. - Duramax
45. Pilot Injector Timing- in degrees - Duramax
46. Main Injector Timing- in degrees - Duramax
47. Pilot Injector Fuel Rate- mm<sup>3</sup> - Duramax
48. Main Injector Fuel Rate- mm<sup>3</sup> - Duramax
49. Miles Per Gallon 1- instantaneous fuel economy for gas vehicles
50. Miles Per Gallon 2- instantaneous fuel economy for diesel vehicles
51. HP 1- Calculated net horsepower for gasoline vehicles
52. HP 2- Calculated net horsepower for diesel vehicles

53. Analog 1 – analog input #1.
54. Analog 2 – analog input #2
55. TOTAL MISFIRES- Total misfires of all cylinders. Resets every minute.
56. BAROMETRIC PRESSURE- limited support on standard GM vehicles, DM support
57. PITCH – H2 Hummer support – indicates the angle of inclination of the vehicle.
58. CURRENT GEAR- Current gear of the transmission
59. TORQUE- Calculated torque from engine to transmission
60. SHIFT TIME- time (msec) for last shift to occur.
61. TORQUE CONVERTER SLIP – Amount of slip allowed by torque converter
62. TORQUE CONVERTER STATUS- Indicates whether torque converter is locked (L) or unlocked (UL)

\*\*These standard GM parameters also are supported by the Duramax diesel

### **Bi-directional controls:**

1. Fan 1-3 control
2. PCM (fuel trim) reset
3. CASE (Crank Angle Sensor Error) Re- Learn

### **General Motors (CAN vehicles) – CN series gauges:**

1. INTAKE AIR- Intake Air Temperature
2. COOLANT TEMP- Engine Coolant Temperature
3. TRANS TEMP 1- Transmission Temperature for automatic vehicles
4. RPM- engine Revolutions Per Minute
5. MAF SENSOR LB/M- Mass Air Flow (lbs/min)
6. MAF FREQUENCY- raw Mass Air Flow sensor output (frequency)
7. DI FUEL PRESSURE – Direct injection fuel pressure (vehicle must have direct injection)
8. MAP SENSOR- Manifold Air Pressure (kPa)
9. BOOST – Intake vacuum/boost displayed in inHg/PSI. Corrected by altitude entry or barometer
10. THROTTLE POS. PCT- Throttle Position percentage - actual
11. ABSOLUTE THROTTLE POSITION – will read throttle position from 0-100%
12. MILES PER HOUR- Miles Per Hour
13. KNOCK RETARD- Knock Retard (degrees) for most GM vehicles
14. IGNITION ADVANCE- ignition timing advance
15. PULSE WIDTH- injector #1 pulse width
16. SHORT TRIM B1-short term fuel trim bank#1
17. SHORT TRIM B2-short term fuel trim bank#2
18. LONG TRIM B1-long term fuel trim bank#1
19. LONG TRIM B2-long term fuel trim bank#2
20. O2 SENSOR B1S1-O2 bank 1 sensor1 in millivolts
21. O2 SENSOR B2S1-O2 bank 2 sensor1 in millivolts
22. O2 SENSOR B1S2-O2 bank 1 sensor 2 in millivolts
23. O2 SENSOR B2S2-O2 bank 2 sensor 2 in millivolts
24. RUN TIME MINS- engine run time is tenths of seconds since last engine start
25. BATTERY VOLTAGE- Alternator/battery output voltage
26. CURRENT GEAR- The current gear of an automatic transmission.
27. PULSE WIDTH B1-injector Pulse Width for bank 1 (8 cylinder engines)
28. PULSE WIDTH B2-injector Pulse Width for bank 2 (8 cylinder engines)
29. INJECTOR DUTY CYCLE- 0-100%
30. ENGINE LOAD- calculated Engine Load (0-100%)
31. ENGINE OIL PRESSURE (not supported by all vehicles)
32. ENGINE OIL TEMPERATURE – Engine oil temp.

33. INTAKE AIR 2 – Intake Air Temp. downstream of intercooler (some supercharged applications such as the Cobalt SS, Solstice GTP, Saturn Sky).
34. TOTAL MISFIRES- Total misfires of all cylinders. Resets every minute
35. Miles Per Gallon 1- instantaneous fuel economy for gas vehicles
36. BAROMETRIC PRESSURE- Displays atmospheric pressure. All vehicles may not support this.
37. HP - Calculated net horsepower
38. TRQ RDCT RTRD – Spark retard due to torque management ( automatics trans)
39. DELIVERED TORQUE – Calculated torque delivered from engine to transmission (automatic trans)
40. TRQ TRAC CNTL - Desired torque from traction control system (auto trans)
41. TC SLP SPD RPM – Torque converter slip (RPM) (auto trans)
42. TRANS IN RPM – RPM of input shaft to transmission (auto trans)
43. TRANS OUT RPM – RPM of transmission output shaft (auto trans)
44. NON DRV SPEED – Speed of non-driven wheel (mph)
45. TCC STATUS – Indicates “UL” or “L” (unlocked /locked) depending on the state of the Torque Converter Clutch
46. FUEL STATUS – Displays “Open” or “Closed” to indicate open or closed loop fueling.
47. FUEL LEVEL – Gallons of fuel remaining in tank.
48. Cat Temp1 – Calculated catalytic converter #1 temperature (calc’ed by the car’s PCM)
49. Cat Temp2 – Calculated catalytic converter #2 temperature (calc’ed by the car’s PCM)
48. Analog 1 – analog input #1.
49. Analog 2 – analog input #2
50. COMMANDED A/F – Commanded air/fuel ratio by PCM.
51. COMMANDED LAMBDA – Commanded Lambda (a different way of measuring A/F ratio.  $\text{Lambda} = 14.7/\text{actual A/F ratio}$ . Therefore a value greater than 1 is “rich”, less is “lean”.
52. LAMBDA – Actual Lambda (only available on vehicles with factory wideband sensor)
53. A/F RATIO – Actual A/F ratio (only available on vehicles with factory wideband sensor)
54. SENSOR CURRENT – Current draw of wideband O2 sensor (only available on vehicles with factory wideband sensor)

### **Bi-directional controls:**

4. Fan 1-3 control
5. PCM (fuel trim) reset
6. CASE (Crank Angle Sensor Error) Re- Learn

Notes:

“g” suffix, such as “Intake Air g” simply means that this is a generic parameter and can be displayed on any CAN bus vehicle except Honda.

### **Duramax Diesel (CAN – LBZ, LMM)**

1. INTAKE AIR g - Intake Air Temperature
2. COOLANT TEMP g - Engine Coolant Temperature
3. BAROMETRIC PRESSURE
4. RPM g - engine Revolutions Per Minute
5. MAF SENSOR LB/M g - Mass Air Flow (lbs/min)
6. MAP SENSOR g - Manifold Air Pressure (kPa)
7. BOOST g – Intake vacuum/boost displayed in inHg/PSI. Corrected by barometer
8. MILES PER HOUR g - Miles Per Hour
9. RUN TIME MINS - engine run time is tenths of seconds since last engine start
10. BATTERY VOLTAGE- Alternator/battery output voltage
11. ENGINE LOAD g - calculated Engine Load (0-100%)

12. ENGINE OIL PRESSURE
13. INTAKE AIR 2 DM - Intake Air Temp. downstream of intercooler
14. TRANS TEMP AL- Allison transmission temp
15. TORQUE CONVERTER SLIP AL- Allison transmission converter slip
16. TQ TO TRANS AL- Engine torque delivered to trans
17. INJECTOR RAIL PRESSURE DESIRED DM
18. INJECTOR RAIL PRESSURE ACTUAL DM
19. THROTTLE PCT DM- Throttle percentage DM
20. THROTTLE VOLTS DM- Throttle sensor voltage DM
21. FUEL LEVEL DM
22. TURBO VANE POSITION DESIRED DM
23. TURBO VANE POSITION ACTUAL DM
24. MAIN INJECTOR TIMING DM
25. PILOT INJECTOR TIMING DM
26. MAIN INJECTOR PULSE WIDTH DM
27. PILOT INJECTOR PULSE WIDTH DM
28. MAIN INJECTOR FLOW RATE DM
29. PILOT INJECTOR FLOW RATE DM
30. Miles Per Gallon - instantaneous fuel economy for diesel vehicles
31. HP 2- Calculated net horsepower for diesel vehicles
32. Analog 1 – analog input #1.
33. Analog 2 – analog input #2

## Ford (non-CAN) FD series gauges:

Platforms:

Platform 1: All Ford except Power Stroke diesel

Platform 2: Power Stroke diesel

Platform 1 parameters:

1. IAT1- Intake Air temperature
2. **IAT2- Intake air temperature mainly supported by 1996-2000 Ford**
3. CHARGE TEMP – Post intercooler air temp, 2003/2004 Cobra/1999-2004 Lightning
3. COOLANT TEMP 1- Engine coolant temp.
4. **COOLANT TEMP 2 – Engine coolant temp. (1996-2000)**
5. CYL HED Temp – Cylinder head temperature deg. F.
5. TRANS TEMP- Transmission Temperature (gas powered automatics)
6. RPM1- engine Revolutions Per Minute
7. **RPM2- engine Revolutions Per Minute 1996-2000**
8. MAF SENSOR LB/M- Mass Air Flow (lbs/min)
9. MAF COUNTS 1- 1999-2004 4.6L raw Mass Air Flow sensor output (counts)
10. MAF COUNTS 2- 1998 4.6L raw MAF counts
11. MAF COUNTS 3- 1996-1997 4.6L raw MAF counts

12. MAF COUNTS 4- 2001-2004 Lightning MAF counts
13. MAF COUNTS 5- 1999-2000 Lightning MAF counts
14. MAF COUNTS 6- SVT Contour MAF counts
15. MAF COUNTS 7- 2001-2003 SVT Focus
16. MAF COUNTS 8 – 2003 F-150
17. MAF Volts
17. THRTL PCT1- Throttle Position percentage (0-100%)
19. THRTL PCT2- Throttle Position percentage (0-100%) (1996-2000 Ford)
20. THROTTLE VOLTS- Throttle Position sensor output (0-5 volts)
21. MPH 1 – mile per hour
22. MPH 2 – mile per hour (1996-2000 Ford)
21. KNOCK 1- Knock Retard (degrees) 4.6L 4v non-SC'ed
22. KNOCK 2- Knock Retard (degrees) 4.6L 4v non-SC'ed
23. IGNITION ADVANCE - ignition timing advance
24. PULSE WIDTH 1- 1999-2004 4.6L injector #1 pulse width in counts
25. PULSE WIDTH 2- 1998 4.6L injector #1 pulse width in counts
26. PULSE WIDTH 3- 1996-1997 4.6L injector #1 pulse width in counts
27. PULSE WIDTH 4- 2001-2004 Lightning injector #1 pulse width in counts
28. PULSE WIDTH 5- 1999-2000 Lightning injector #1 pulse width in counts
29. PULSE WIDTH 6- SVT Contour injector #1 pulse width in counts
30. PULSE WIDTH 7- SVT Focus injector #1 pulse width in counts
31. INJ. DUTY 1-7: percent of injector duty cycle, 0-100%. Same list as Pulse Width.
32. BOOST – Manifold air pressure displayed as in-Hg/PSI as a boost gauge would.  
Corrected by the barometer. Requires factory MAP sensor.
33. MAP KPA - Manifold Air Pressure (kPa)
32. SHORT TRIM B1-short term fuel trim bank#1
33. SHORT TRIM B1% -short term fuel trim bank#1 (1996-2000 Ford)
34. SHORT TRIM B2-short term fuel trim bank#2
35. SHORT TRIM B2% -short term fuel trim bank#2 (1996-2000 Ford)
36. LONG TRIM B1-long term fuel trim bank#1
37. LONG TRIM B1% -long term fuel trim bank#1 (1996-2000 Ford)
38. LONG TRIM B2-long term fuel trim bank#2
39. LONG TRIM B2% -long term fuel trim bank#2 (1996-2000 Ford)
40. OXYGEN SENSOR B1 1-O2 bank 1 sensor in millivolts
41. OXYGEN SENSOR B2 1-O2 bank 2 sensor in millivolts
42. OXYGEN SENSOR B1 2-O2 bank 1 sensor in millivolts (1996-2000 Ford)
43. OXYGEN SENSOR B2 2-O2 bank 2 sensor in millivolts (1996-2000 Ford)
44. BATTERY VOLTAGE- Alternator/battery output voltage
45. ENGINE LOAD-calculated Engine Load (0-100%)
46. FUEL PRESSURE - returnless systems only
47. FUEL PUMP DUTY CYCLE- returnless systems only
48. FUEL LEVEL % - Fuel Tank Percent Full.
48. ENGINE TRQ 1 - (Auto trans) Calculated torque to trans 2003 F-150
49. ENGINE TRQ 2 – (Auto trans) Calculated torque to trans (general Ford)
49. TRANS SLIP 1 - (Auto trans) 2003 F-150
50. TRANS SLIP 2 – (Auto trans) 2001-2004 Lightning

50. Miles Per Gallon – instantaneous fuel economy
51. HP 1 – 2000-2004 Mustang/Cobra
52. HP 2 – F150 including Lightning
53. HP 3 – General Ford
54. HP 4 - Marauder
55. RPM PIP 1 – 1997 Cobra – displays RPM at a faster rate at WOT than standard RPM parameters.
56. RPM PIP 2 – 1998 Cobra – displays RPM at a faster rate at WOT than standard RPM parameters.
57. Analog 1 – analog input #1
58. Analog 2 – analog input #2
60. IGN ADV 1 – Ignition advance
62. **IGN ADV 2 – Ignition advance (1996-2000)**
64. BAROM – PCM calculated barometer.
65. TRANS TEMP VOLTS – output voltage of transmission temp sensor
66. TRANS TEMP 2 – Trans temp derived from trans temp volts for early OBD2 Ford.

Notes: Single Ford gauges don't have and don't need the redundant parameters listed in **red**. The second gauge of a dual set **will** due to limitations of the data bus. This second gauge will have a part number in this form FDx02 (the single or main gauge will be labeled FDx01). When choosing parameters on the second gauge, choose the red parameter if your vehicle is a 2000 model year or older.

On the second gauge, if the correct MPH parameter is not selected, the MPG (fuel economy) will not function. Choose only one MPH parameter.

Visit our Technical forums at <http://aeroforcetech.com/forums> for more assistance in choosing parameters and setting up this Ford Universal gauge.

Platform 2 parameters (Powerstroke):

1. INTAKE AIR 2- Intake Air Temperature taken at the throttle body inlet
2. COOLANT TEMP 2- Engine Coolant Temperature
3. RPM 2- engine Revolutions Per Minute
4. MANIFOLD PSI 1- Manifold Air Pressure (psia) for voltage based MAP sensors (mid 1990's trucks).
5. Manifold PSI 2 – Manifold Air Pressure (psia) for frequency based MAP sensors
6. BOOST 1 – Boost Pressure in psig for voltage based MAP
7. BOOST 2 – Boost Pressure in psig for frequency based MAP
8. MILES PER HOUR 2- Miles Per Hour
9. TRANS TEMP 1- Transmission Temperature for 1998 and newer trucks
10. TRANS TEMP 2 – Trans temp derived from the trans temp sensor voltage for 1997 and older trucks.
11. TRANS VOLTS – Transmission temperature sensor raw voltage.
11. RUN TIME MINS- engine run time since last engine start. Can be used as a trip timer.
12. BATTERY VOLTAGE- Alternator/battery output voltage

13. PULSE WIDTH- injector pulse width in msec.
14. ENGINE OIL TEMP
15. EX. BACK PRESS – Exhaust back pressure
16. ICP DC – Injector Control Pressure Duty Cycle
17. ICP – Injector Control Pressure
18. INJ. TIMING – Injector Timing Deg BTDC
19. CURRENT GEAR – Current Transmission Gear

## Ford (CAN) Vehicles – CNF series gauges:

### Platforms:

Platform 1: Ford CAN gas powered automobiles – everything that is not mentioned below in platform 2 or 3.

Platform 2: Ford Powerstroke diesel.

Platform 3: Ford Hybrid

### PLATFORM 1 PARAMETERS:

1. INTAKE AIR- Intake Air Temperature
2. INTAKE AIR TEMP. 2 (intercooled applications)
3. COOLANT TEMP- Engine Coolant Temperature
4. TRANS TEMP 1- Transmission Temperature (gas powered automatics)
5. TRANS TEMP 2- Transmission Temperature. Can be used if Trans Temp 1 is not supported.
6. RPM- engine Revolutions Per Minute
7. MAF SENSOR LB/M- Mass Air Flow (lbs/min)
8. MAF COUNTS- Mass Air Flow sensor raw output in counts
9. FUEL LEVEL – 0-100 %
10. MANIFOLD PSI- Manifold Air Pressure (psi)
11. THROTTLE POS PCT- Throttle Position percentage (0-100%). Will typically read around 10-90%.
12. PEDAL POSITION – Similar to Throttle pos. but is rescaled to read the full 0-100 range.
13. MILES PER HOUR- Miles Per Hour
14. KNOCK RETARD- Knock Retard (degrees) 4.6L 4v non-SC'ed
15. IGNITION ADVANCE- ignition timing advance
16. SHORT TRIM B1-short term fuel trim bank#1
17. SHORT TRIM B2-short term fuel trim bank#2
18. LONG TRIM B1-long term fuel trim bank#1
19. LONG TRIM B2-long term fuel trim bank#2
20. OXYGEN SENSOR B1-O2 bank 1 sensor in millivolts
21. OXYGEN SENSOR B2-O2 bank 2 sensor in millivolts
22. BATTERY VOLTAGE- Alternator/battery output voltage
23. ENGINE LOAD-calculated Engine Load (0-100%)
24. FUEL PRESSURE
25. FUEL PUMP DUTY CYCLE

26. CYLINDER HEAD TEMPERATURE
27. OIL TEMPERATURE – not widely supported on Fords.
28. Calculated Engine Torque (Auto trans)
29. TRANS SLIP 1 - Transmission slip for most 2005/2006 vehicles
30. TRANS SLIP 2 – Transmission slip for some 2007+ vehicles
31. TRANS SLIP 3 – Transmission slip for some 2007+ vehicles, mainly trucks.
30. Current Gear – current transmission gear
31. Miles Per Gallon – instantaneous fuel economy
32. Calculated net horsepower
33. FUEL STATUS – Displays “Open” or “Closed” to indicate open or closed loop fueling.
34. Analog 1 – analog input #1
35. Analog 2 – analog input #2

Note: “g” suffix found on gauge display indicates a generic parameter.

#### PLATFORM 2 PARAMETERS:

1. INTAKE AIR g - Intake Air Temperature
2. INTAKE AIR TEMP. 2 - Post intercooler air temp.
3. COOLANT TEMP g - Engine Coolant Temperature
4. TRANS TEMP 1- Transmission Temperature
5. TRANS TEMP 2- Transmission Temperature. Can be used if Trans Temp 1 is not supported.
6. RPM g - engine Revolutions Per Minute
7. MAF SENSOR g LB/M- Mass Air Flow (lbs/min)
8. MAF COUNTS- Mass Air Flow sensor raw output in counts
9. FUEL LEVEL – 0-100 %
10. BOOST g - turbo boost pressure (psi)
11. THROTTLE POS PCT- Throttle Position percentage (0-100%). Will typically read around 10-90%.
12. PEDAL POSITION – Similar to Throttle pos. but is rescaled to read the full 0-100 range.
13. MILES PER HOUR g - Miles Per Hour
14. AMBIENT AIR – Air temp before the air filter.
15. IGNITION ADVANCE g - ignition timing advance
16. MAP g – Manifold Absolute Pressure.
17. CURRENT GEAR – Current commanded transmission gear
18. EXHAUST BACK PRESSURE ps – Displayed in kPa
19. ICP DC ps – Injector Control Pressure Duty Cycle (2003-2007)
20. ICP PRESSURE ps – Injector Control Pressure (psi) (2003-2007)
21. INJ. PW – Injector pulse width
22. INJ. TIMING ps – Injector Timing in Degrees BTDC
23. ENGINE OIL TEMP ps
24. VGT DC ps – Variable Geometry Turbo Duty Cycle
25. BATTERY VOLTAGE- Alternator/battery output voltage

26. ENGINE LOAD g -calculated Engine Load (0-100%)
27. Transmission Slip (Auto trans)
28. Miles Per Gallon – instantaneous fuel economy
29. Calculated net horsepower
30. EGT1 ps – EGT sensor 1 (2008+ Power Stroke)
31. EGT2 ps – EGT sensor 2 (2008+ Power Stroke)
32. EGT3 ps – EGT sensor 3 (2008+ Power Stroke)
33. FUEL TEMP ps – Fuel temperature (2008+ Power Stroke)
34. FUEL RAIL PRESSURE – Common rail fuel pressure (2008 Power Stroke)
35. Analog 1 – analog input #1
36. Analog 2 – analog input #2

Note that parameters ending in “ps” are Power Stroke specific.

#### PLATFORM 3 PARAMETERS:

1. INTAKE AIR g - Intake Air Temperature
2. INTAKE AIR TEMP. 2 - Post intercooler air temp.
3. COOLANT TEMP g - Engine Coolant Temperature
4. TRANS TEMP 1- Transmission Temperature
5. RPM g - engine Revolutions Per Minute
6. MAF SENSOR g LB/M- Mass Air Flow (lbs/min)
7. MAF COUNTS- Mass Air Flow sensor raw output in counts
8. FUEL LEVEL – 0-100 %
9. BOOST/VACUUM g – vacuum (inHg)/boost (psi)
10. THROTTLE POS PCT- Throttle Position percentage (0-100%). Will typically read around 10-90%.
11. PEDAL POSITION – Similar to Throttle pos. but is rescaled to read the full 0-100 range.
12. MILES PER HOUR g - Miles Per Hour
13. AMBIENT AIR – Air temp before the air filter.
14. IGNITION ADVANCE g - ignition timing advance
15. MAP g – Manifold Absolute Pressure kPa.
16. CURRENT GEAR – Current commanded transmission gear
17. T BATT SOC% - traction battery state of charge
18. T BATT VOLTS – traction battery voltage
19. T BATT TEMP – traction battery temperature
20. T MOTOR RPM – traction motor rpm
21. GEN. RPM – generator rpm
22. ELEC COOLANT – motor electronics coolant temp
23. CHRGE LMT W – charge limit
24. DISCHRG LMT W – discharge limit
25. VOT DELTA – module voltage delta
26. MODULE TEMP – electronics module temperature

27. MTR COIL T – motor coil temperature
28. GEN COIL T – generator coil temperature

## Chrysler (non-CAN) Vehicles – SR series gauges:

Platforms:

Platform 1: Neon SRT4, Neon, PT Cruiser

Platform 2: Ram, Durango, Dakota, 300m, Intrepid, Stratus, Sebring, Concord, LHS, Liberty

1. INTAKE AIR- Intake Air Temperature taken at the throttle body inlet
2. AMBIENT AIR TEMPERATURE – air temperature at the air filter
3. COOLANT TEMP- Engine Coolant Temperature
4. RPM- engine Revolutions Per Minute
5. CALCULATED AIR FLOW RATE- Mass Air Flow (lbs/min) calculated by the PCM
6. BAROMETRIC PRESSURE – ambient (outside) air pressure
7. MANIFOLD PSI- Manifold Air Pressure (boost-psi)
8. THROTTLE POS PCT- Throttle Position percentage (0-100%)
9. THROTTLE VOLTS- Throttle Position sensor output (0-5 volts)
10. MILES PER HOUR- Miles Per Hour
11. KNOCK RETARD- Total Knock Retard (degrees)
12. ST KNOCK RETARD – Short term knock retard
13. LT KNOCK RETARD – Long term knock retard
14. FUEL KNOCK RETARD – ST + LT knock retard
15. KNOCK SENSOR RAW VOLTAGE – voltage output of knock sensor
16. WASTEGATE SOLENOID % DUTY CYCLE – programmed wastegate Duty cycle, 0-100%
17. SHORT TRIM FUEL TRIM- short term fuel trim
18. LONG TRIM FUEL TRIM – long term fuel trim
19. OXYGEN SENSOR - O2 bank 1 sensor in millivolts
20. FUEL LEVEL – amount of fuel in the tank in gallons.
21. EXHAUST GAS TEMP – calculated/determined by the PCM
22. TRANS TEMP- Transmission Temperature (auto transmission only)
23. RUN TIME MINS- engine run time since last engine start. Can be used as a trip timer.
24. BATTERY VOLTAGE- Alternator/battery output voltage
25. BATTERY TEMP - Battery Temperature
26. PULSE WIDTH- injector pulse width
27. FUEL TEMPERATURE
28. BASE SPARK TIMING – timing level commanded by the PCM before adjustments due to temperature, knock, etc.
29. SPARK ADJUST – adjustments made to base spark timing
30. IGNITION ADVANCE- final ignition timing advance after adjustments
31. ENGINE LOAD-calculated Engine Load (0-100%)
32. Miles Per Gallon- instantaneous fuel economy

33. Calculated net horsepower
34. TOTAL MISFIRES- Total misfires of all cylinders.
35. P Ratio – Pressure Ratio MAP/BAROMETER
36. Analog 1 – analog input #1.
37. Analog 2 – analog input #2

All second gauges of a dual set will only support highlighted in red parameters due to limitations of the OBD2 bus. Single gauges and primary gauges of dual sets will support all the above parameters.

## Chrysler (CAN) Vehicles – CNC series gauges:

### Platforms:

Platform 1: 2004-2006 Durango, 2005-2006 Dakota, 2005-2006.5 300/Charger/Magnum, 2006 PT Cruiser, 2006 Ram (gasoline), 2005/2006 Grand Cherokee, 2006 Liberty, 2006 Commander, 2006 Avenger, 2006 Nitro,

Platform 2: 2007+ Durango, 2007+ Dakota, 2006.5+ 300/Charger/Magnum, 2007+ PT Cruiser, 2007+ Ram (gas), 2007+ Grand Cherokee, 2007+ Liberty, 2007+ Commander, 2007+ Avenger, 2007+ Nitro.

Platform 3: 2006+ Caliber, 2006+ Patriot, 2006+ Compass

1. INTAKE AIR- Intake Air Temperature taken at the throttle body inlet
2. AMBIENT AIR TEMPERATURE – air temperature at the air filter
3. COOLANT TEMP- Engine Coolant Temperature
4. RPM- engine Revolutions Per Minute
5. CALCULATED AIR FLOW RATE- Mass Air Flow (lbs/min) calculated by the PCM
6. BAROMETRIC PRESSURE – ambient (outside) air pressure
7. BOOST - Manifold Absolute air Pressure in psi (reads like a boost/vacuum gauge)
8. MAP kPa – Manifold absolute pressure in kPa.
9. THROTTLE POS PCT- Throttle Position percentage (0-100%)
10. THRTL BLDE - Throttle blade position
11. TPS V 1 – Throttle position sensor voltage 1
12. TPS V 2 - Throttle position sensor voltage 2
13. MILES PER HOUR- Miles Per Hour
14. KNOCK RET 1 - Short Term (current) Knock Retard (degrees) using the 2005 Chrysler conversion
15. KNOCK RET 2 - Short Term (current) Knock Retard (degrees) using the 2006 Chrysler conversion
16. LT KNOCK RETARD – Long Term knock retard ignition advance reduction
17. KNOCK SENSOR RAW VOLTAGE 1 – voltage output of knock sensor 1
18. KNOCK SENSOR RAW VOLTAGE 1 Avg. – voltage output of knock sensor 1 averaged over time
19. KNOCK SENSOR RAW VOLTAGE 2 – voltage output of knock sensor 2
20. KNOCK SENSOR RAW VOLTAGE 2 Avg. – voltage output of knock sensor 2 averaged over time
21. WASTEGATE SOLENOID % DUTY CYCLE – programmed wastegate Duty cycle, 0-100%
22. SHORT TRIM FUEL TRIM- short term fuel trim
23. LONG TRIM FUEL TRIM – long term fuel trim
24. CRNT CELL – Currently fuel trim look-up table cell
25. OXYGEN SENSOR - O2 bank 1 sensor in millivolts
26. FUEL LEVEL % – amount of fuel in the tank in percent.

27. FUEL CAP – Fuel tank capacity in gallons.
28. CAT CON TEMP - Catalytic converter exhaust temp bank 1 and 2 – calculated by the PCM
29. LINE PRS – Transmission line pressure
30. TR OIL TEMP 1- Transmission Temperature (auto transmission only)
31. TR OIL TEMP 2 -
32. TCC SLIP – Torque converter slip
33. CURRENT GEAR 1 – current transmission gear
34. CURRENT GEAR 2 – current transmission gear
35. SHIFT TIME – Time taken to execute last shift
36. LFW/LRW SPEED – non-driven wheel speed (left front or left rear)
37. STEERING ANGLE – Angle in degrees or steering wheel/shaft
38. YAW – output of yaw sensor of ESP system in degrees. Yaw is body roll.
39. BRAKE PSI – Brake boost pressure in psi.
40. LATERAL G – Lateral acceleration as measured by ESP system accelerometer
41. BOOSTER TRV – Brake booster travel
42. BOOSTER VEL – Brake booster actuator velocity. Measurement of speed at which braking is applied. The faster the brake is pushed, the higher this value. This parameter along with BRAKE PSI will give detailed info on how you are applying the brakes.
43. TCC STATE – Indicates the status of the torque converter clutch (unlocked/locked).
44. TCC SLIP – Torque converter slip speed.
45. GEAR ACTUAL – current transmission gear
46. TRANS TEMP – transmission temp
47. TORQUE – calculated torque delivered to the transmission
48. RUN TIME MINS- engine run time since last engine start. Can be used as a trip timer.
49. BATTERY VOLTAGE- Alternator/battery output voltage
50. BATT TEMP – battery temperature
51. INJ PW- injector pulse width in msec.
52. INJ DC – injector duty cycle
53. FUEL STATUS – Fueling status, open or closed loop
54. CMD A/F – PCM commanded air/fuel ratio
55. BASE SPARK TIMING – timing level commanded by the PCM before adjustments due to temperature, knock, etc.
57. IGNITION ADVANCE- final ignition timing advance after adjustments
58. ENGINE LOAD-calculated Engine Load (0-100%)
60. MPG - Miles Per Gallon- instantaneous fuel economy
61. HP - Calculated net horsepower
62. MISFIRES- Total misfires of all cylinders.
63. P Ratio – Pressure ratio MAP/BAROMETER
64. TRANS TEMP V6/R08: For V6 vehicles only and the 2007/8 V8 Ram
65. TRANS SLIP V6/R08: Transmission Torque converter slip for V6 and 2007/8 V8 Ram.
64. Analog 1 – analog input #1.
65. Analog 2 – analog input #2

### **Bi-Directional Controls (may not work on every Chrysler):**

1. Low Speed fan control – works on most Chrysler
2. High Speed fan control – works on most Chrysler
3. TCM reset – Transmission reset
4. ESP disable/enable

Transmission parameters in red generally apply to pre 2007 vehicles, but some early 2006 will use these depending on build date. Transmission parameters in blue are generally for late 2006 models and later. **Transmission parameters in Platform 2 that have a**

**“R08” suffix are for the 2007+ Ram trucks.** Most 2007+ Chryslers only have one fan speed.

Not all vehicles will support nor make all of these parameters available for scan.

## Mazda (CAN) Vehicles – CNI series gauges

1. INTAKE AIR- Intake Air Temperature
2. BOOST TEMP SENSOR – Calculated actual boost air temp. based on sensor output
3. COOLANT TEMP- Engine Coolant Temperature
4. TRANS TEMP- Transmission Temperature (gas powered automatics)
5. RPM- engine Revolutions Per Minute
6. MAF SENSOR LB/M- Mass Air Flow (lbs/min)
7. DIRECT INJ PRESS – Direct injection fuel pressure
8. INJECTOR PULSE WIDTH
9. INJECTOR DUTY CYCLE – 0-100%
10. MANIFOLD PSI- Manifold Air Pressure (psi)
11. THROTTLE POS PCT- Throttle Position percentage (0-100%)
12. THROTTLE VOLTS- Throttle Position sensor output (0-5 volts)
13. MILES PER HOUR- Miles Per Hour
14. KNOCK RETARD- Knock Retard (degrees)
15. IGNITION ADVANCE- ignition timing advance
16. SHORT TRIM B1-short term fuel trim bank#1
17. SHORT TRIM B2-short term fuel trim bank#2
18. LONG TRIM B1-long term fuel trim bank#1
19. LONG TRIM B2-long term fuel trim bank#2
20. COMMANDED EQ RATIO – Commanded Equivalency ratio
21. LAMDA – Wideband O2 sensor equivalency ratio
22. A/F RATIO – Wideband O2 sensor displayed as Air/Fuel ratio
23. O2 CURRENT – Wideband O2 sensor current
24. BATTERY VOLTAGE- Alternator/battery output voltage
25. ENGINE LOAD-calculated Engine Load (0-100%)
26. Calculated Engine Torque (Auto trans)
27. Miles Per Gallon – instantaneous fuel economy
28. Calculated net horsepower
29. VALVE TIMING – Valve timing in degrees
30. Analog 1 – analog input #1
31. Analog 2 – analog input #2

## Toyota (CAN) Vehicles – CNI series gauges

1. INTAKE AIR- Intake Air Temperature
2. BOOST TEMP SENSOR – Calculated actual boost air temp. based on sensor output

3. COOLANT TEMP- Engine Coolant Temperature
4. TRANS TEMP- Transmission Temperature (gas powered automatics)
5. TRANS TEMP 2 – Secondary Transmission Temperature (trucks)
6. RPM- engine Revolutions Per Minute
7. MAF SENSOR LB/M- Mass Air Flow (lbs/min)
8. MISFIRES
9. INJECTOR PULSE WIDTH
10. INJECTOR DUTY CYCLE – 0-100%
11. MAP PRESSURE – kPa
12. BOOST/VACUUM – inHg vacuum/ psi boost
13. THROTTLE POS PCT- Throttle Position percentage (0-100%)
14. MILES PER HOUR- Miles Per Hour
15. KNOCK FEEDBACK- Knock Retard (degrees)
16. KNOCK CORRECTION LEARNED VALUE
17. IGNITION ADVANCE- ignition timing advance
18. SHORT TRIM B1-short term fuel trim bank#1
19. SHORT TRIM B2-short term fuel trim bank#2
20. LONG TRIM B1-long term fuel trim bank#1
21. LONG TRIM B2-long term fuel trim bank#2
22. COMMANDED EQ RATIO – Commanded Equivalency ratio
23. A/F RATIO – Wideband O2 sensor displayed as Air/Fuel ratio
24. BATTERY VOLTAGE- Alternator/battery output voltage
25. ENGINE LOAD-calculated Engine Load (0-100%)
26. Miles Per Gallon – instantaneous fuel economy
27. Calculated net horsepower
28. YAW
29. LATERAL G's
30. Forward G's
31. Reverse G's.
32. Analog 1 – analog input #1
33. Analog 2 – analog input #2

### **Toyota ISO Supported Parameters (PID'S). ISOI series gauge**

1. IAT – Intake Air Temperature
2. COOLANT – engine coolant temperature
3. RPM – engine speed
4. MAP – Manifold Air Pressure or boost (not supported on most Toyotas)
5. MAF lb/min – Mass Air Flow in lbs per minute
6. MPH – Miles Per Hour
7. THROTTLE PCT – percent of throttle opening
8. IGN. ADV – Ignition Advance
9. STFT B1S1 – Short Term Fuel Trim bank 1 sensor 1
10. STFT B2S1 – Short Term Fuel Trim bank 2 sensor 1

11. LTFT B1S1 - Long Term Fuel Trim bank 1 sensor 1
12. LTFT B2S1 - Long Term Fuel Trim bank 2 sensor 1
13. ENGINE LOAD – PCM calculated percent of engine load
14. FUEL STATUS – Open or Closed loop operation
15. MPG – calculated fuel economy
16. HP – calculated horsepower
17. AT TEMP – Automatic Transmission temperature
18. INJ. PW – Injector Pulse Width in msec.
19. MISFIRES – total misfires of all cylinders per 600 rpms (not supported by all vehicles)

### **Nissan CAN Supported Parameters (PID'S) (2007+ MY) CNI series gauge**

1. INTAKE AIR- Intake Air Temperature
2. AMBIENT AIR TEMP - air temperature before the air filter, may be outside ambient or engine bay temp.
3. COOLANT TEMP- Engine Coolant Temperature
4. INTAKE VALVE TIMING - valve timing in degrees
5. RPM- engine Revolutions Per Minute
6. MAF SENSOR LB/M- Mass Air Flow (lbs/min)
7. MAF SENSOR VOLTS - raw voltage of mass air flow sensor
8. INJECTOR PULSE WIDTH
9. INJECTOR DUTY CYCLE – 0-100%
10. FUEL TEMPERATURE
11. THROTTLE POS PCT- Throttle Position percentage (0-100%)
12. CATALYTIC CONVERTER TEMP BANK 1
13. CATALYTIC CONVERTER TEMP BANK 2
14. MILES PER HOUR- Miles Per Hour
15. IGNITION ADVANCE- ignition timing advance
16. SHORT TRIM B1-short term fuel trim bank#1
17. SHORT TRIM B2-short term fuel trim bank#2
18. LONG TRIM B1-long term fuel trim bank#1
19. LONG TRIM B2-long term fuel trim bank#2
20. COMMANDED A/F RATIO – Commanded air-fuel ratio
21. TRANSMISSION RATIO - CVT transmission
22. TORQUE RATIO - CVT transmission
23. PRIMARY TRANSMISSION OIL PRESSURE
24. SECONDARY TRANS OIL PRESSURE
25. BATTERY VOLTAGE- Alternator/battery output voltage
26. ENGINE LOAD-calculated Engine Load (0-100%)
27. Miles Per Gallon – instantaneous fuel economy
28. Calculated net horsepower
29. TRANS TEMP- Transmission Temperature (gas powered automatics including CVT)
30. ENGINE RUN TIME - minutes since ignition was turned on
30. Analog 1 – analog input #1
31. Analog 2 – analog input #2

### **Bi-directional Controls:**

Manual control of low, medium, and high radiator fan. Allows you to command the fan to run at these speeds at any time.

## **Nissan ISO Supported Parameters (PID'S) (Pre-2007 MY) ISOi series gauge**

1. IAT – Intake Air Temperature
2. COOLANT – engine coolant temperature
3. RPM – engine speed
4. MAP – Manifold Air Pressure or boost (not supported on most Toyotas)
5. MAF lb/min – Mass Air Flow in lbs per minute
6. MPH – Miles Per Hour
7. THROTTLE PCT – percent of throttle opening
8. IGN. ADV – Ignition Advance
9. STFT B1S1 – Short Term Fuel Trim bank 1 sensor 1
10. STFT B2S1 – Short Term Fuel Trim bank 2 sensor 1
11. LTFT B1S1 - Long Term Fuel Trim bank 1 sensor 1
12. LTFT B2S1 - Long Term Fuel Trim bank 2 sensor 1
13. ENGINE LOAD – PCM calculated percent of engine load
14. FUEL STATUS – Open or Closed loop operation
15. MPG – calculated fuel economy
16. HP – calculated horsepower
17. AT TEMP – Automatic Transmission temperature
18. INJ. PW – Injector Pulse Width in msec.
19. MISFIRES – total misfires of all cylinders per 600 rpms ( not supported by all vehicles)