

## 2014-18 ENGINE PERFORMANCE

### Mode 6 - GMLAN

## INTRODUCTION

Mode 6 is designed to allow access to the results of onboard diagnostic monitoring tests of specific components/systems that are not continuously monitored. These systems include the catalytic converter, EVAP system, oxygen sensor, oxygen sensor heater, EGR system, secondary AIR system, and sometimes misfire.

Mode 6 data is output from the PCM/ECM in hexadecimal form. The \$ sign indicates a hexadecimal number. Depending on the software in the scanner, the output could be displayed in hexadecimal numbers (no conversion), raw data (conversion to decimal numbers), or measurable values (applying conversion factor to raw data).

Before reading mode 6 information, ensure that the monitor for the information you are accessing has run to completion. If the monitor is not complete, the mode 6 data will not be accurate.

## GMLAN (CAN)

GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)               | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|---------------------------------------|--------------------|------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| Oxygen Sensor Monitor Bank 1 Sensor 1 |                    |                              |                                                                            |                                                        |                                                             |
| 01                                    | 01                 | 0A                           | Rich to Lean Sensor Threshold Voltage                                      | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 01                                    | 02                 | 0A                           | Lean to Rich Sensor Threshold Voltage                                      | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 01                                    | 03                 | 0A                           | Low Sensor Voltage for Switch Time Calculation                             | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 01                                    | 04                 | 0A                           | High Sensor Voltage for Switch Time Calculation                            | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 01                                    | 05                 | 10                           | Rich to Lean Sensor Switch Time                                            | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 01                                    | 06                 | 10                           | Lean to Rich Sensor Switch Time                                            | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 01                                    | 07                 | 0A                           | Minimum Sensor Voltage Achieved                                            | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 01                                    | 08                 | 0A                           | Maximum Sensor Voltage Achieved                                            | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 01                                    | 0A                 | 10                           | Sensor Period (Calculated)                                                 | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 01                                    | 10 <sup>(1)</sup>  | 06                           | B1S1 WRAF Slow Response                                                    | 0 to 19.99 raw value                                   | 0.000305 / bit                                              |
| 01                                    | 80                 | 16                           | Particulate Matter Sensor Temperature Not Plausible                        | -40 to 6513.5°C                                        | 0.1 °C / bit - 40°C                                         |
| 01                                    | 80 <sup>(10)</sup> | 2B                           | Rich to Lean Switches Test Results                                         | 0 to 65535 switches                                    | 1 switch / bit                                              |
| 01                                    | 81 <sup>(10)</sup> | 24                           | Particulate Matter Sensor Temperature Performance                          | 0 to 65535 counts                                      | 1 count / bit                                               |
| 01                                    | 81 <sup>(10)</sup> | 2B                           | Lean to Rich Switches Test Results                                         | 0 to 65535 switches                                    | 1 switch / bit                                              |
| 01                                    | 82                 | 20                           | Rich-Lean Response to Lean-Rich Response Ratio                             | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 01                                    | 82 <sup>(10)</sup> | 41                           | Particulate Matter Sensor Shunt Circuit Current                            | 0 to 655.35 uAmps                                      | 0.01 uAmps / bit                                            |
| 01                                    | 83                 | 05                           | Dynamic Response Performance                                               | 0 to 1.999                                             | 0.000305 / bit                                              |
| 01                                    | 83                 | 0A                           | Low Sensor Voltage for Half Period Time Calculation                        | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 01                                    | 83 <sup>(10)</sup> | 41                           | Particulate Matter Sensor Electrode Current value during regeneration      | 0 to 655.35 uAmps                                      | 0.01 uAmps / bit                                            |
| 01                                    | 84 <sup>(10)</sup> | 04                           | Particulate Matter Sensor Electrode Current difference during regeneration | 0 to 65.535 unitless                                   | 0.001 / bit                                                 |
| 01                                    | 84                 | 0A                           | High Sensor Voltage for Half Period Time Calculation                       | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 01                                    | 84                 | 85                           | Secondary Sensor Lambda Trim Correction of Primary Sensor                  | -0.999 to +0.999                                       | 0.000305 / bit                                              |
| 01                                    | 85 <sup>(10)</sup> | 0C                           | Particulate Matter Sensor Protection Tube performance                      | 0 to 655.35 Volts                                      | 0.01V / bit                                                 |
| 01                                    | 85                 | 10                           | O2 Sensor Rich to Lean Half Period Time                                    | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 01                                    | 86                 | 10                           | O2 Sensor Lean to Rich Half Period Time                                    | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 01                                    | 87                 | 10                           | Sum of O2 Sensor L/R and R/L Half Period Times                             | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 01                                    | 87 <sup>(10)</sup> | 24                           | Particulate Matter Sensor Sensitivity Factor Performance                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| 01                                    | 88 <sup>(3)</sup>  | 90                           | Difference Between Rich-Lean Response and Lean-Rich Response               | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 01                                    | 89                 | 06                           | B1S1 WRAF Slow Response                                                    | 0 to 19.99 raw value                                   | 0.000305 / bit                                              |
| 01                                    | 8E                 | B1                           | Absolute Average Slope of the O2 Sensor Signal                             | -65536 to +65534 mV/s                                  | 2 mV/s / bit                                                |
| 01                                    | 8F                 | B1                           | Instantaneous Positive Slope of the O2 Sensor Signal                       | -65536 to +65534 mV/s                                  | 2 mV/s / bit                                                |
| 01                                    | 90                 | B1                           | Instantaneous Negative Slope of the O2 Sensor Signal                       | -65536 to +65534 mV/s                                  | 2 mV/s / bit                                                |

Footnotes are explained on the last pages of this document.

1 of 34

GMLAN rev4

**Fig. 1: Mode \$06 Data Definitions - Monitor ID 01 (1 Of 28)**

Courtesy of GENERAL MOTORS CORP.

## GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                               | Range For Information ONLY. Source information is J1979 | Resolution For Information ONLY. Source information is J1979 |
|-------------------------|--------------------|------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| 01                      | 91 <sup>(15)</sup> | 90                           | O2 Sensor Delayed Response - Rich to Lean                                                 | -32768 to +32767 ms                                     | 1 ms / bit                                                   |
| 01                      | 92 <sup>(15)</sup> | 90                           | O2 Sensor Delayed Response - Lean to Rich                                                 | -32768 to +32767 ms                                     | 1 ms / bit                                                   |
| 01                      | 93 <sup>(16)</sup> | 10                           | O2 Sensor Dynamic Period Check - Bank 1 Sensor 1                                          | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                      | 94 <sup>(16)</sup> | 90                           | O2 Sensor Dynamic Symmetry Check - Bank 1 Sensor 1                                        | -32768 to +32767 ms                                     | 1 ms / bit                                                   |
| 01                      | D0                 | 24                           | O2 Value Plausibility Check During Overrun                                                | 0 to 65535 counts                                       | 1 count / bit                                                |
| 01                      | D0                 | 24                           | O2 Value Plausibility Check During Overrun - Bank 1 Sensor 1 (calculated) <sup>(15)</sup> | 0 to 65535 counts                                       | 1 count / bit                                                |
| 01                      | D1                 | 24                           | Dynamic Check for O2 Signal Test                                                          | 0 to 65535 counts                                       | 1 count / bit                                                |
| 01                      | D1                 | 24                           | Dynamic Check for O2 Signal Test - Bank 1 Sensor 1 (calculated) <sup>(16)</sup>           | 0 to 65535 counts                                       | 1 count / bit                                                |
| 01                      | D2                 | 10                           | Dynamic Check of NOx sensor high to low - Bank 1 Sensor 1                                 | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                      | D2                 | 11                           | Dynamic Check of NOx sensor                                                               | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 01                      | D2                 | 11                           | Dynamic Check of NOx sensor - Bank 1 Sensor 1 <sup>(16)</sup>                             | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 01                      | D3                 | 86                           | NOx Sensor Performance - Signal High                                                      | -9.994 to +9.994                                        | 0.000305 / bit                                               |
| 01                      | D3                 | 86                           | NOx Sensor Performance - Signal High Bank 1 Sensor 1 <sup>(16)</sup>                      | -9.994 to +9.994                                        | 0.000305 / bit                                               |
| 01                      | D4                 | 24                           | NOx Sensor Performance - Signal Low/Hi Bank 1 Sensor 1 X/Y debouncing                     | 0 to 65535 counts                                       | 1 count / bit                                                |
| 01                      | D4                 | 86                           | NOx Sensor Performance - Signal Low                                                       | -9.994 to +9.994                                        | 0.000305 / bit                                               |
| 01                      | D4                 | 86                           | NOx Sensor Performance - Signal Low Bank 1 Sensor 1 <sup>(16)</sup>                       | -9.994 to +9.994                                        | 0.000305 / bit                                               |
| 01                      | D5                 | B0                           | NOx Sensor Performance - Signal Low/Hi Bank 1 Sensor 1 EWMA filter                        | -100.01 to +100.00%                                     | 0.003052% / bit                                              |
| 01                      | E0                 | 10                           | O2 Sensor Increasing Dynamic Check Low - Bank 1 Sensor 1                                  | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                      | E0                 | 90 <sup>(16)</sup>           | O2 Sensor Increasing Dynamic Check - Bank 1 Sensor 1                                      | -32768 to +32767 ms                                     | 1 ms / bit                                                   |
| 01                      | E1                 | 10                           | O2 Sensor Increasing Dynamic Check High - Bank 1 Sensor 1                                 | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                      | E2                 | 10                           | O2 Sensor Decreasing Dynamic Check Low - Bank 1 Sensor 1                                  | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                      | E2 <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check - Bank 1 Sensor 1                                      | -32768 to +32767 ms                                     | 1 ms / bit                                                   |
| 01                      | E3                 | 10 <sup>(14)</sup>           | O2 Sensor Decreasing Dynamic Check High - Bank 1 Sensor 1                                 | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                      | E3                 | 20 <sup>(15)</sup>           | O2 Sensor Decreasing Dynamic Check High - Bank 1 Sensor 1                                 | 0 to 255.996                                            | 0.0039062 / bit                                              |
| 01                      | E3                 | 20 <sup>(15)</sup>           | O2 Sensor Decreasing Dynamic Check High - Bank 1 Sensor 1                                 | 0 to 255.996                                            | 0.0039062 / bit                                              |
| 01                      | E4                 | 30                           | Oxygen concentration implausibly high in part load                                        | 0 to 100%                                               | 0.001526% / bit                                              |
| 01                      | E5                 | 30                           | Oxygen concentration implausibly low in part load                                         | 0 to 100%                                               | 0.001526% / bit                                              |
| 01                      | E6                 | 10 <sup>(15)</sup>           | NOx Sensor Dynamic Check low to high Delay Time Test - Bank 1 Sensor 1                    | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                      | E6                 | 11 <sup>(14)</sup>           | NOx Sensor Dynamic Check low to high - Bank 1 Sensor 1                                    | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 01                      | E7                 | 20                           | NOx Sensor Dynamic Check low to high Response Ratio Test - Bank 1 Sensor 1                | 0 to 255.996                                            | 0.0039062 / bit                                              |
| 01                      | E8                 | B0                           | O2 Concentration Plausibility Check During Overrun - Bank 1 Sensor 1                      | -100.01 to +100.00%                                     | 0.003052% / bit                                              |

Footnotes are explained on the last pages of this document.

2 of 34

GMLAN rev4

**Fig. 2: Mode \$06 Data Definitions - Monitor ID 01 (2 Of 28)**

Courtesy of GENERAL MOTORS CORP.

## GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)               | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                          | Range For Information ONLY. Source information is J1979 | Resolution For Information ONLY. Source information is J1979 |
|---------------------------------------|--------------------|------------------------------|----------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| 01                                    | E9                 | B0                           | O2 Concentration Plausibility Check During Load - Bank 1 Sensor 1    | -100.01 to +100.00%                                     | 0.003052% / bit                                              |
| 01                                    | EA                 | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 1    | 0 to 65535 counts                                       | 1 count / bit                                                |
| 01                                    | D6 <sup>(16)</sup> | 24                           | NOx Sensor Dynamic Check high to low Bank 1 Sensor 1                 | 0 to 65535 counts                                       | 1 count / bit                                                |
| 01                                    | ED <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Overrun - Bank 1 Sensor 1 | -100.01 to +100.00%                                     | 0.003052% / bit                                              |
| 01                                    | EE <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Load - Bank 1 Sensor 1    | -100.01 to +100.00%                                     | 0.003052% / bit                                              |
| 01                                    | EF <sup>(16)</sup> | 20                           | NOx Sensor Self Diagnostics - Bank 1 Sensor 1                        | 0 to 255.996                                            | 0.0039062 / bit                                              |
| 01                                    | F0 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check Low - Bank 1 Sensor 1             | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                                    | F0 <sup>(16)</sup> | 90                           | O2 Sensor Increasing Dynamic Check - Bank 1 Sensor 2                 | -32768 to +32767 ms                                     | 1 ms / bit                                                   |
| 01                                    | F1 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check High - Bank 1 Sensor 1            | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                                    | F2 <sup>(16)</sup> | 10                           | O2 Sensor Decreasing Dynamic Check Low - Bank 1 Sensor 1             | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 01                                    | F2 <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check - Bank 1 Sensor 2                 | -32768 to +32767 ms                                     | 1 ms / bit                                                   |
| 01                                    | F3 <sup>(16)</sup> | 20                           | O2 Sensor Decreasing Dynamic Check High - Bank 1 Sensor 1            | 0 to 255.996                                            | 0.0039062 / bit                                              |
| 01                                    | F4 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit - Bank 1 Sensor 1            | -3276.8 to +3276.7 ppm                                  | 0.1 ppm / bit                                                |
| 01                                    | F5 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit - Bank 1 Sensor 2            | -3276.8 to +3276.7 ppm                                  | 0.1 ppm / bit                                                |
| 01                                    | F6 <sup>(16)</sup> | 04                           | NOx sensor slow response monitor - Bank 1 Sensor 2                   | 0 to 65.535                                             | 0.001 / bit                                                  |
| 01                                    | F7 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit - Bank 1 Sensor 3            | -3276.8 to +3276.7 ppm                                  | 0.1 ppm / bit                                                |
| 01                                    | F8 <sup>(16)</sup> | 20                           | NOx Sensor Self Diagnostics - Bank 1 Sensor 3                        | 0 to 255.996                                            | 0.0039062 / bit                                              |
| 01                                    | F9 <sup>(16)</sup> | 90                           | O2 Sensor Increasing Dynamic Check - Bank 1 Sensor 3                 | -32768 to +32767 ms                                     | 1 ms / bit                                                   |
| 01                                    | FA <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check - Bank 1 Sensor 3                 | -32768 to +32767 ms                                     | 1 ms / bit                                                   |
| 01                                    | FB <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Overrun - Bank 1 Sensor 3 | -100.01 to +100.00%                                     | 0.003052% / bit                                              |
| 01                                    | FC <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Load - Bank 1 Sensor 3    | -100.01 to +100.00%                                     | 0.003052% / bit                                              |
| Oxygen Sensor Monitor Bank 1 Sensor 2 |                    |                              |                                                                      |                                                         |                                                              |
| 02                                    | 05                 | 10                           | Rich to Lean Sensor Transient (Gradient) Time                        | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 02                                    | 05                 | 20                           | B1S2 rich-lean switch time in fuel cut-off                           | 0 to 255.996                                            | 0.0039062 / bit                                              |
| 02                                    | 07                 | 0A                           | Minimum Sensor Voltage Achieved                                      | 0.0000 to 7.9900 Volts                                  | 0.122 mV / bit                                               |
| 02                                    | 08                 | 0A                           | Maximum Sensor Voltage Achieved                                      | 0.0000 to 7.9900 Volts                                  | 0.122 mV / bit                                               |
| 02                                    | 80 <sup>(16)</sup> | 16                           | Particulate Matter Sensor Temperature Not Plausible                  | -40 to 6513.5°C                                         | 0.1°C / bit - 40°C                                           |
| 02                                    | 81 <sup>(16)</sup> | 24                           | Particulate Matter Sensor Temperature Performance                    | 0 to 65535 counts                                       | 1 count / bit                                                |
| 02                                    | 81 <sup>(16)</sup> | 0A                           | Maximum Sensor Voltage for Functional Check                          | 0.0000 to 7.9900 Volts                                  | 0.122 mV / bit                                               |
| 02                                    | 82 <sup>(16)</sup> | 41                           | Particulate Matter Sensor Shunt Circuit Current                      | 0 to 655.35 uAmps                                       | 0.01 uAmps / bit                                             |
| 02                                    | 82 <sup>(16)</sup> | 0A                           | Minimum Sensor Voltage for Functional Check                          | 0.0000 to 7.9900 Volts                                  | 0.122 mV / bit                                               |

Footnotes are explained on the last pages of this document.

3 of 34

GMLAN rev4

**Fig. 3: Mode \$06 Data Definitions - Monitor ID 01-02 (3 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID)     | Units and Scaling ID (UASID) | Description                                                                            | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-------------------------|-------------------|------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 02                      | 83 <sup>(6)</sup> | 41                           | Particulate Matter Sensor Electrode Current value during regeneration                  | 0 to 655.35 uAmps                                      | 0.01 uAmps / bit                                            |
| 02                      | 84 <sup>(6)</sup> | 04                           | Particulate Matter Sensor Electrode Current difference during regeneration             | 0 to 65.535 unitless                                   | 0.001 / bit                                                 |
| 02                      | 85 <sup>(6)</sup> | 0C                           | Particulate Matter Sensor Protection Tube performance                                  | 0 to 655.35 Volts                                      | 0.01V / bit                                                 |
| 02                      | 86                | 10                           | Rich to Lean Sensor Delay (Response) Time                                              | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 02                      | 86                | 35                           | Rich to Lean Sensor Delay (Response) Time                                              | 0 to 65535 ms                                          | 10 ms / bit                                                 |
| 02                      | 87 <sup>(6)</sup> | 24                           | Particulate Matter Sensor Sensitivity Factor Performance                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| 02                      | 8A                | 24                           | Post Catalyst Sensor Open Test                                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| 02                      | 8A                | 24                           | Post Catalyst Sensor Open Test – Bank 1 Sensor 2 <sup>(6)</sup>                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| 02                      | 8B                | 0A                           | Post Catalyst Sensor Rich Test                                                         | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 02                      | 8B                | 0A                           | Post Catalyst Sensor Rich Tests – Bank 1 Sensor 2 <sup>(6)</sup>                       | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 02                      | 8C                | 0A                           | Post Catalyst Sensor Lean Test                                                         | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 02                      | 8C                | 0A                           | Post Catalyst Sensor Lean Tests – Bank 1 Sensor 2 <sup>(6)</sup>                       | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 02                      | 91                | 0A                           | Post Catalyst Sensor Delayed Initial R/L Response Test                                 | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 02                      | 92                | 0A                           | Post Catalyst Sensor Delayed Initial L/R Response Test                                 | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 02                      | 93                | 03                           | Post Catalyst Sensor Slow R/L Response Test                                            | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| 02                      | 93 <sup>(6)</sup> | 11                           | Rich to Lean Sensor Transient (Gradient) Time                                          | 0 to 6553.5 s                                          | 100 ms / bit                                                |
| 02                      | 94                | 03                           | Post Catalyst Sensor Slow L/R Response Test                                            | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| 02                      | D0 <sup>(6)</sup> | 24                           | O2 Value Plausibility Check During Overrun – Bank 1 Sensor 2 (calculated)              | 0 to 65535 counts                                      | 1 count / bit                                               |
| 02                      | D0 <sup>(6)</sup> | 30                           | O2 Value Plausibility Check During Overrun                                             | 0 to 100%                                              | 0.001526% / bit                                             |
| 02                      | D1 <sup>(6)</sup> | 24                           | Dynamic Check for O2 Signal Test – Bank 1 Sensor 2 (calculated)                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| 02                      | D2 <sup>(6)</sup> | 10                           | Dynamic Check of NOx sensor high to low – Bank 1 Sensor 2                              | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 02                      | D4 <sup>(6)</sup> | 24                           | NOx Sensor Performance - Signal Low/Hi Bank 1 Sensor 2 X/Y debouncing                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| 02                      | D5                | 01                           | NOx Sensor Performance - Signal Insufficient Peak Value                                | 0 to 65535 unitless                                    | 1 count / bit                                               |
| 02                      | D5                | 01                           | NOx Sensor Performance - Signal Insufficient Peak Value Bank 1 Sensor 2 <sup>(6)</sup> | 0 to 65535 unitless                                    | 1 count / bit                                               |
| 02                      | D5 <sup>(6)</sup> | B0                           | NOx Sensor Performance - Signal Low/Hi Bank 1 Sensor 2 EWMA filter                     | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 02                      | D6                | 01 <sup>(14)</sup>           | NOx Sensor Performance                                                                 | 0 to 65535 unitless                                    | 1 count / bit                                               |
| 02                      | D6                | 24 <sup>(15)</sup>           | NOx Sensor Dynamic Check high to low Bank1 Sensor2                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| 02                      | D7                | 30                           | Oxygen concentration implausibly high in part load                                     | 0 to 100%                                              | 0.001526% / bit                                             |
| 02                      | D8                | 30                           | Oxygen concentration implausibly low in part load                                      | 0 to 100%                                              | 0.001526% / bit                                             |
| 02                      | E0 <sup>(6)</sup> | 10                           | O2 Sensor Increasing Dynamic Check Low – Bank 1 Sensor 2                               | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 02                      | E0                | 20 <sup>(15)</sup>           | NOx Sensor Self Diagnostics – Bank 1 Sensor 2                                          | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 02                      | E0                | 81 <sup>(14)</sup>           | NOx Sensor Self Diagnostics – Bank 1 Sensor 2                                          | -32768 to +32767                                       | 1 / bit                                                     |

Footnotes are explained on the last pages of this document.

4 of 34

GMLAN rev4

**Fig. 4: Mode \$06 Data Definitions - Monitor ID 02 (4 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-------------------------|--------------------|------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 02                      | E0 <sup>(6)</sup>  | 90                           | O2 Sensor Increasing Dynamic Check – Bank 1 Sensor 1                       | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 02                      | E0 <sup>(6)</sup>  | AF                           | NOx Sensor Self Diagnostics – Bank 1 Sensor 2                              | -32768 to +32767                                       | 1 / bit                                                     |
| 02                      | E1 <sup>(6)</sup>  | 10                           | O2 Sensor Increasing Dynamic Check High – Bank 1 Sensor 2                  | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 02                      | E1                 | 81                           | NOx Signal Stuck in Range – Bank 1 Sensor 2                                | -32768 to +32767                                       | 1 / bit                                                     |
| 02                      | E1                 | AF <sup>(16)</sup>           | NOx Signal Stuck in Range – Bank 1 Sensor 2                                | -32768 to +32767                                       | 1 / bit hex to decimal                                      |
| 02                      | E2 <sup>(6)</sup>  | 10                           | O2 Sensor Decreasing Dynamic Check Low – Bank 1 Sensor 2                   | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 02                      | E2                 | 81                           | NOx Sensor Abort Self Diagnostics – Bank 1 Sensor 2                        | -32768 to +32767                                       | 1 / bit                                                     |
| 02                      | E2 <sup>(6)</sup>  | 90                           | O2 Sensor Decreasing Dynamic Check – Bank 1 Sensor 1                       | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 02                      | E3 <sup>(6)</sup>  | 20                           | O2 Sensor Decreasing Dynamic Check High – Bank 1 Sensor 2                  | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 02                      | E6 <sup>(6)</sup>  | 10                           | NOx Sensor Dynamic Check low to high Delay Time Test – Bank 1 Sensor 2     | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 02                      | E7 <sup>(6)</sup>  | 20                           | NOx Sensor Dynamic Check low to high Response Ratio Test – Bank 1 Sensor 2 | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 02                      | E8                 | B0                           | O2 Concentration Plausibility Check During Overrun – Bank 1 Sensor 2       | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 02                      | E9                 | B0                           | O2 Concentration Plausibility Check During Load – Bank 1 Sensor 2          | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 02                      | EA                 | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 2          | 0 to 65535 counts                                      | 1 count / bit                                               |
| 02                      | ED <sup>(6)</sup>  | B0                           | O2 Concentration Plausibility Check During Overrun – Bank 1 Sensor 2       | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 02                      | EE <sup>(6)</sup>  | B0                           | O2 Concentration Plausibility Check During Load – Bank 1 Sensor 2          | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 02                      | EF <sup>(6)</sup>  | 20                           | NOx Sensor Self Diagnostics – Bank 1 Sensor 2                              | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 02                      | F0                 | 10                           | O2 Sensor Increasing Dynamic Check Low – Bank 1 Sensor 2                   | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 02                      | F0 <sup>(6)</sup>  | 90                           | O2 Sensor Increasing Dynamic Check – Bank 1 Sensor 2                       | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 02                      | F1                 | 10                           | O2 Sensor Increasing Dynamic Check High – Bank 1 Sensor 2                  | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 02                      | F2                 | 10                           | O2 Sensor Decreasing Dynamic Check Low – Bank 1 Sensor 2                   | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 02                      | F2 <sup>(6)</sup>  | 90                           | O2 Sensor Decreasing Dynamic Check – Bank 1 Sensor 2                       | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 02                      | F3                 | 20                           | O2 Sensor Decreasing Dynamic Check High – Bank 1 Sensor 2                  | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 02                      | F4 <sup>(6)</sup>  | 82                           | NOx sensor offset learning at min limit – Bank 1 Sensor 1                  | -3276.8 to +3276.7 ppm                                 | 0.1 ppm / bit                                               |
| 02                      | F5 <sup>(6)</sup>  | 82                           | NOx sensor offset learning at min limit – Bank 1 Sensor 2                  | -3276.8 to +3276.7 ppm                                 | 0.1 ppm / bit                                               |
| 02                      | F6 <sup>(6)</sup>  | 04                           | NOx sensor slow response monitor – Bank 1 Sensor 2                         | 0 to 65.535                                            | 0.001 / bit                                                 |
| 02                      | F7 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit – Bank 1 Sensor 3                  | -3276.8 to +3276.7 ppm                                 | 0.1 ppm / bit                                               |
| 02                      | F8 <sup>(16)</sup> | 20                           | NOx Sensor Self Diagnostics – Bank 1 Sensor 3                              | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 02                      | F9 <sup>(16)</sup> | 90                           | O2 Sensor Increasing Dynamic Check – Bank 1 Sensor 3                       | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 02                      | FA <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check – Bank 1 Sensor 3                       | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 02                      | FB <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Overrun – Bank 1 Sensor 3       | -100.01 to +100.00%                                    | 0.003052% / bit                                             |

Footnotes are explained on the last pages of this document.

5 of 34

GMLAN rev4

**Fig. 5: Mode \$06 Data Definitions - Monitor ID 02 (5 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)               | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|---------------------------------------|--------------------|------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 02                                    | FC <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Load – Bank 1 Sensor 3          | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| Oxygen Sensor Monitor Bank 1 Sensor 3 |                    |                              |                                                                            |                                                        |                                                             |
| 03                                    | 80                 | 16                           | Particulate Matter Sensor Temperature Not Plausible                        | -40 to 6513.5°C                                        | 0.1°C / bit - 40°C                                          |
| 03                                    | 81                 | 24                           | Particulate Matter Sensor Sensitivity Factor Performance                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| 03                                    | 82                 | 41                           | Particulate Matter Sensor Shunt Circuit Current                            | 0 to 655.35 uAmps                                      | 0.01 uAmps / bit                                            |
| 03                                    | 83                 | 41                           | Particulate Matter Sensor Electrode Current value during regeneration      | 0 to 655.35 uAmps                                      | 0.01 uAmps / bit                                            |
| 03                                    | 84                 | 04                           | Particulate Matter Sensor Electrode Current difference during regeneration | 0 to 65.535 unitless                                   | 0.001 / bit                                                 |
| 03                                    | 85                 | 0C                           | Particulate Matter Sensor Protection Tube performance                      | 0 to 655.35 Volts                                      | 0.01V / bit                                                 |
| 03                                    | 87                 | 24                           | Particulate Matter Sensor Sensitivity Factor Performance                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| 03                                    | 8A                 | 24                           | Post Catalyst Sensor Open Test                                             | 0 to 65535 counts                                      | 1 count / bit                                               |
| 03                                    | 8A                 | 24                           | Post Catalyst Sensor Open Test – Bank 1 Sensor 3 <sup>(16)</sup>           | 0 to 65535 counts                                      | 1 count / bit                                               |
| 03                                    | 8B                 | 0A                           | Post Catalyst Sensor Rich Test                                             | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 03                                    | 8B                 | 0A                           | Post Catalyst Sensor Rich Tests – Bank 1 Sensor 3 <sup>(16)</sup>          | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 03                                    | 8C                 | 0A                           | Post Catalyst Sensor Lean Test                                             | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 03                                    | 8C                 | 0A                           | Post Catalyst Sensor Lean Tests – Bank 1 Sensor 3 <sup>(16)</sup>          | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 03                                    | 91                 | 0A                           | Post Catalyst Sensor Delayed Initial R/L Response Test                     | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 03                                    | 92                 | 0A                           | Post Catalyst Sensor Delayed Initial L/R Response Test                     | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 03                                    | 93                 | 03                           | Post Catalyst Sensor Slow R/L Response Test                                | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| 03                                    | 94                 | 03                           | Post Catalyst Sensor Slow L/R Response Test                                | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| 03                                    | D0 <sup>(16)</sup> | 24                           | O2 Value Plausibility Check During Overrun – Bank 1 Sensor 3 (calculated)  | 0 to 65535 counts                                      | 1 count / bit                                               |
| 03                                    | D1 <sup>(16)</sup> | 24                           | Dynamic Check for O2 Signal Test – Bank 1 Sensor 3 (calculated)            | 0 to 65535 counts                                      | 1 count / bit                                               |
| 03                                    | D2 <sup>(16)</sup> | 10                           | Dynamic Check of NOx sensor high to low – Bank 1 Sensor 3                  | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 03                                    | D4 <sup>(16)</sup> | 24                           | NOx Sensor Performance - Signal Low/Hi Bank 1 Sensor 3 X/Y debouncing      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 03                                    | D5 <sup>(16)</sup> | B0                           | NOx Sensor Performance - Signal Low/Hi Bank 1 Sensor 3 EWMA filter         | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 03                                    | D6 <sup>(16)</sup> | 01                           | NOx Sensor Performance Bank 1 Sensor 3                                     | 0 to 65535                                             | 1 count / bit                                               |
| 03                                    | D6 <sup>(16)</sup> | 24                           | NOx Sensor Dynamic Check high to low Bank1 Sensor 3                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| 03                                    | E0 <sup>(16)</sup> | 90                           | O2 Sensor Increasing Dynamic Check – Bank 1 Sensor 1                       | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 03                                    | E0 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check Low – Bank 1 Sensor 3                   | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 03                                    | E0 <sup>(16)</sup> | AF                           | NOx Sensor Self Diagnostics – Bank 1 Sensor 3                              | -32768 to +32767                                       | 1 / bit                                                     |
| 03                                    | E1 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check High – Bank 1 Sensor 3                  | 0 to 65535 ms                                          | 1 ms / bit                                                  |

Footnotes are explained on the last pages of this document.

6 of 34

GMLAN rev4

**Fig. 6: Mode \$06 Data Definitions - Monitor ID 02-03 (6 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                     | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-------------------------|--------------------|------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 03                      | E2 <sup>(16)</sup> | 10                           | O2 Sensor Decreasing Dynamic Check Low – Bank 1 Sensor 3                        | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 03                      | E2 <sup>(16)</sup> | 81                           | NOx Sensor Abort Self Diagnostics – Bank 1 Sensor 3                             | -32768 to +32767                                       | 1 / bit                                                     |
| 03                      | E2 <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check – Bank 1 Sensor 1                            | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 03                      | E3 <sup>(16)</sup> | 20                           | O2 Sensor Decreasing Dynamic Check High – Bank 1 Sensor 3                       | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 03                      | E6 <sup>(16)</sup> | 10                           | NOx Sensor Dynamic Check low to high Delay Time Test – Bank 1 Sensor 3          | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 03                      | E7 <sup>(16)</sup> | 20                           | NOx Sensor Dynamic Check low to high Response Ratio Test – Bank 1 Sensor 3      | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 03                      | E8 <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Overrun – Bank 1 Sensor 3            | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 03                      | E9 <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Load – Bank 1 Sensor 3               | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 03                      | ED <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Overrun – Bank 1 Sensor 3            | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 03                      | EE <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Load – Bank 1 Sensor 3               | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 03                      | EF <sup>(16)</sup> | 20                           | NOx Sensor Self Diagnostics – Bank 1 Sensor 3                                   | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 03                      | F0 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check Low – Bank 1 Sensor 3                        | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 03                      | F0 <sup>(16)</sup> | 90                           | O2 Sensor Increasing Dynamic Check – Bank 1 Sensor 2                            | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 03                      | F1 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check High – Bank 1 Sensor 3                       | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 03                      | F2 <sup>(16)</sup> | 10                           | O2 Sensor Decreasing Dynamic Check Low – Bank 1 Sensor 3                        | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 03                      | F2 <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check – Bank 1 Sensor 2                            | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 03                      | F3 <sup>(16)</sup> | 20                           | O2 Sensor Decreasing Dynamic Check High – Bank 1 Sensor 3                       | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 03                      | F4 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit – Bank 1 Sensor 1                       | -3276.8 to +3276.7 ppm                                 | 0.1 ppm / bit                                               |
| 03                      | F5 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit – Bank 1 Sensor 2                       | -3276.8 to +3276.7 ppm                                 | 0.1 ppm / bit                                               |
| 03                      | F6 <sup>(16)</sup> | 04                           | NOx sensor slow response monitor – Bank 1 Sensor 2                              | 0 to +65.535 unitless                                  | 0.001 / bit                                                 |
| 03                      | F7 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit – Bank 1 Sensor 3                       | -3276.8 to +3276.7 ppm                                 | 0.1 / bit                                                   |
| 03                      | F8 <sup>(16)</sup> | 20                           | NOx Sensor Self Diagnostics – Bank 1 Sensor 3                                   | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 03                      | F9 <sup>(16)</sup> | 2F                           | Particulate Matter Sensor Sensitivity Factor Performance                        | 0 to 655.35%                                           | 0.01% / bit                                                 |
| 03                      | F9 <sup>(16)</sup> | 90                           | O2 Sensor Increasing Dynamic Check – Bank 1 Sensor 3                            | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 03                      | FA <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check – Bank 1 Sensor 3                            | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 03                      | FB <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Overrun – Bank 1 Sensor 3            | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 03                      | FC <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Load – Bank 1 Sensor 3               | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 03                      | FD <sup>(16)</sup> | 41                           | Particulate Matter Sensor Shunt Circuit Current                                 | 0 to 655.35 uAmps                                      | 0.01 uAmps / bit                                            |
| 03                      | FE <sup>(16)</sup> | 2F                           | Particulate Matter Sensor Protection Tube monitor normalized integrated voltage | 0 to 655.35%                                           | 0.01% / bit                                                 |

Footnotes are explained on the last pages of this document.

7 of 34

GMLAN rev4

**Fig. 7: Mode \$06 Data Definitions - Monitor ID 03 (7 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                      | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|----------------------------------------------|--------------------|------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| <b>Oxygen Sensor Monitor Bank 1 Sensor 4</b> |                    |                              |                                                                            |                                                        |                                                             |
| 04                                           | 80 <sup>(16)</sup> | 16                           | Particulate Matter Sensor Temperature Not Plausible                        | -40 to 6513.5°C                                        | 0.1°C / bit - 40°C                                          |
| 04                                           | 81 <sup>(16)</sup> | 24                           | Particulate Matter Sensor Temperature Performance                          | 0 to 65535 counts                                      | 1 count / bit                                               |
| 04                                           | 82 <sup>(16)</sup> | 41                           | Particulate Matter Sensor Shunt Circuit Current                            | 0 to 655.35 uAmps                                      | 0.01 uAmps / bit                                            |
| 04                                           | 83 <sup>(16)</sup> | 41                           | Particulate Matter Sensor Electrode Current value during regeneration      | 0 to 655.35 uAmps                                      | 0.01 uAmps / bit                                            |
| 04                                           | 84 <sup>(16)</sup> | 04                           | Particulate Matter Sensor Electrode Current difference during regeneration | 0 to 65.535 unitless                                   | 0.001 / bit                                                 |
| 04                                           | 85 <sup>(16)</sup> | 0C                           | Particulate Matter Sensor Protection Tube performance                      | 0 to 655.35 Volts                                      | 0.01V / bit                                                 |
| 04                                           | 87 <sup>(16)</sup> | 24                           | Particulate Matter Sensor Sensitivity Factor Performance                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| 04                                           | D0 <sup>(16)</sup> | 24                           | O2 Value Plausibility Check During Overrun – Bank 1 Sensor 4 (calculated)  | 0 to 65535 counts                                      | 1 count / bit                                               |
| 04                                           | D1 <sup>(16)</sup> | 24                           | Dynamic Check for O2 Signal Test – Bank 1 Sensor 4 (calculated)            | 0 to 65535 counts                                      | 1 count / bit                                               |
| 04                                           | D2 <sup>(16)</sup> | 10                           | Dynamic Check of NOx sensor high to low – Bank 1 Sensor 4                  | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 04                                           | D4 <sup>(16)</sup> | 24                           | NOx Sensor Performance - Signal Low/Hi Bank 1 Sensor 4 X/Y debouncing      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 04                                           | D5 <sup>(16)</sup> | B0                           | NOx Sensor Performance - Signal Low/Hi Bank 1 Sensor 4 EWMA filter         | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 04                                           | D6 <sup>(16)</sup> | 24                           | NOx Sensor Dynamic Check high to low Bank1 Sensor 4                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| 04                                           | E0 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check Low – Bank 1 Sensor 4                   | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 04                                           | E0 <sup>(16)</sup> | 90                           | O2 Sensor Increasing Dynamic Check – Bank 1 Sensor 1                       | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 04                                           | E1 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check High – Bank 1 Sensor 4                  | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 04                                           | E2 <sup>(16)</sup> | 10                           | O2 Sensor Decreasing Dynamic Check Low – Bank 1 Sensor 4                   | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 04                                           | E2 <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check – Bank 1 Sensor 1                       | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 04                                           | E3 <sup>(16)</sup> | 20                           | O2 Sensor Decreasing Dynamic Check High – Bank 1 Sensor 4                  | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 04                                           | E6 <sup>(16)</sup> | 10                           | NOx Sensor Dynamic Check low to high Delay Time Test – Bank 1 Sensor 4     | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 04                                           | E7 <sup>(16)</sup> | 20                           | NOx Sensor Dynamic Check low to high Response Ratio Test – Bank 1 Sensor 4 | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 04                                           | E8 <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Overrun – Bank 1 Sensor 4       | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 04                                           | E9 <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Load – Bank 1 Sensor 4          | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 04                                           | ED <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Overrun – Bank 1 Sensor 4       | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 04                                           | EE <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Load – Bank 1 Sensor 4          | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 04                                           | EF <sup>(16)</sup> | 20                           | NOx Sensor Self Diagnostics – Bank 1 Sensor 4                              | 0 to 255.996                                           | 0.0039062 / bit                                             |

Footnotes are explained on the last pages of this document.

8 of 34

GMLAN rev4

**Fig. 8: Mode \$06 Data Definitions - Monitor ID 04 (8 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                      | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                                  | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|----------------------------------------------|--------------------|------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 04                                           | F0 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check Low – Bank 1 Sensor 4                                     | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 04                                           | F0 <sup>(16)</sup> | 90                           | O2 Sensor Increasing Dynamic Check – Bank 1 Sensor 2                                         | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 04                                           | F1 <sup>(16)</sup> | 10                           | O2 Sensor Increasing Dynamic Check High – Bank 1 Sensor 4                                    | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 04                                           | F2 <sup>(16)</sup> | 10                           | O2 Sensor Decreasing Dynamic Check Low – Bank 1 Sensor 4                                     | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 04                                           | F2 <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check – Bank 1 Sensor 2                                         | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 04                                           | F3 <sup>(16)</sup> | 20                           | O2 Sensor Decreasing Dynamic Check High – Bank 1 Sensor 4                                    | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 04                                           | F4 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit – Bank 1 Sensor 1                                    | -3276.8 to +3276.7 ppm                                 | 0.1 ppm / bit                                               |
| 04                                           | F5 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit – Bank 1 Sensor 2                                    | -3276.8 to +3276.7 ppm                                 | 0.1 ppm / bit                                               |
| 04                                           | F6 <sup>(16)</sup> | 04                           | NOx sensor slow response monitor – Bank 1 Sensor 2                                           | 0 to +65.535 unitless                                  | 0.001 / bit                                                 |
| 04                                           | F7 <sup>(16)</sup> | 82                           | NOx sensor offset learning at min limit – Bank 1 Sensor 3                                    | -3276.8 to +3276.7 ppm                                 | 0.1 ppm / bit                                               |
| 04                                           | F8 <sup>(16)</sup> | 20                           | NOx Sensor Self Diagnostics – Bank 1 Sensor 3                                                | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 04                                           | F9 <sup>(16)</sup> | 90                           | O2 Sensor Increasing Dynamic Check – Bank 1 Sensor 3                                         | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 04                                           | FA <sup>(16)</sup> | 90                           | O2 Sensor Decreasing Dynamic Check – Bank 1 Sensor 3                                         | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 04                                           | FB <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Overrun – Bank 1 Sensor 3                         | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 04                                           | FC <sup>(16)</sup> | B0                           | O2 Concentration Plausibility Check During Load – Bank 1 Sensor 3                            | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| <b>Oxygen Sensor Monitor Bank 2 Sensor 1</b> |                    |                              |                                                                                              |                                                        |                                                             |
| 05                                           | 01                 | 0A                           | Rich to Lean Sensor Threshold Voltage                                                        | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                                           | 01                 | 0A                           | Rich to lean sensor threshold voltage – Bank 2 Sensor 1 (constant) <sup>(16)</sup>           | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                                           | 02                 | 0A                           | Lean to Rich Sensor Threshold Voltage                                                        | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                                           | 02                 | 0A                           | Lean to rich sensor threshold voltage – Bank 2 Sensor 1 (constant) <sup>(16)</sup>           | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                                           | 03                 | 0A                           | Low Sensor Voltage for Switch Time Calculation                                               | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                                           | 03                 | 0A                           | Low sensor voltage for switch time calculation – Bank 2 Sensor 1 (constant) <sup>(16)</sup>  | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                                           | 04                 | 0A                           | High Sensor Voltage for Switch Time Calculation                                              | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                                           | 04                 | 0A                           | High sensor voltage for switch time calculation – Bank 2 Sensor 1 (constant) <sup>(16)</sup> | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                                           | 05                 | 10                           | Rich to Lean Sensor Switch Time                                                              | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                                           | 05                 | 10                           | Rich to lean sensor switch time – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>               | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                                           | 06                 | 10                           | Lean to Rich Sensor Switch Time                                                              | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                                           | 06                 | 10                           | Lean to rich sensor switch time – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>               | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                                           | 07                 | 0A                           | Minimum Sensor Voltage Achieved                                                              | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |

Footnotes are explained on the last pages of this document.

9 of 34

GMLAN rev4

**Fig. 9: Mode \$06 Data Definitions - Monitor ID 04-05 (9 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID)     | Units and Scaling ID (UASID) | Description                                                                                                 | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-------------------------|-------------------|------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 05                      | 08                | 0A                           | Maximum Sensor Voltage Achieved                                                                             | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                      | 0A                | 10                           | Sensor Period (Calculated)                                                                                  | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                      | 10 <sup>(1)</sup> | 06                           | B2S1 WRAF Slow Response                                                                                     | 0 to 19.99 raw value                                   | 0.000305 / bit                                              |
| 05                      | 80                | 2B                           | Rich to Lean Switches Test Results                                                                          | 0 to 65535 switches                                    | 1 switch / bit                                              |
| 05                      | 80                | 2B                           | Rich to Lean Switches Test Results – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>                           | 0 to 65535 switches                                    | 1 switch / bit                                              |
| 05                      | 81                | 2B                           | Lean to Rich Switches Test Results                                                                          | 0 to 65535 switches                                    | 1 switch / bit                                              |
| 05                      | 81                | 2B                           | Lean to Rich Switches Test Results – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>                           | 0 to 65535 switches                                    | 1 switch / bit                                              |
| 05                      | 82                | 20                           | Rich-Lean Response to Lean-Rich Response Ratio                                                              | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 05                      | 82                | 20                           | Rich-Lean Response to Lean-Rich Response Ratio – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>               | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 05                      | 83                | 0A                           | Low Sensor Voltage for Half Period Time Calculation                                                         | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                      | 83                | 0A                           | Low sensor voltage for half period time calculation – Bank 2 Sensor 1 (constant) <sup>(16)</sup>            | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                      | 84                | 0A                           | High Sensor Voltage for Half Period Time Calculation                                                        | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                      | 84                | 0A                           | High sensor voltage for half period time calculation – Bank 2 Sensor 1 (constant) <sup>(16)</sup>           | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 05                      | 85                | 10                           | O2 Sensor Rich to Lean Half Period Time                                                                     | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                      | 85                | 10                           | O2 sensor rich to lean half period time – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>                      | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                      | 86                | 10                           | O2 Sensor Lean to Rich Half Period Time                                                                     | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                      | 86                | 10                           | O2 sensor lean to rich half period time – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>                      | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                      | 87                | 10                           | Sum of O2 Sensor L/R and R/L Half Period Times                                                              | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                      | 87                | 10                           | Sum of O2 sensor L/R and R/L half period times – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>               | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                      | 88                | 90                           | Difference Between Rich-Lean Response and Lean-Rich Response                                                | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 05                      | 88                | 90                           | Difference Between Rich-Lean Response and Lean-Rich Response – Bank 2 Sensor 1 (calculated) <sup>(16)</sup> | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 05                      | 89                | 06                           | B2S1 WRAF Slow Response                                                                                     | 0 to 19.99 raw value                                   | 0.000305 / bit                                              |
| 05                      | 8E                | B1                           | Absolute Average Slope of the O2 Sensor Signal                                                              | -65536 to +65534 mV/s                                  | 2 mV/s / bit                                                |
| 05                      | 8E                | B1                           | Absolute Average Slope of the O2 Sensor Signal – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>               | -65536 to +65534 mV/s                                  | 2 mV/s / bit                                                |
| 05                      | 8F                | B1                           | Instantaneous Positive Slope of the O2 Sensor Signal                                                        | -65536 to +65534 mV/s                                  | 2 mV/s / bit                                                |
| 05                      | 8F                | B1                           | Instantaneous Positive Slope of the O2 Sensor Signal – Bank 2 Sensor 1 (calculated) <sup>(16)</sup>         | -65536 to +65534 mV/s                                  | 2 mV/s / bit                                                |
| 05                      | 90                | B1                           | Instantaneous Negative Slope of the O2 Sensor Signal                                                        | -65536 to +65534 mV/s                                  | 2 mV/s / bit                                                |

Footnotes are explained on the last pages of this document.

10 of 34

GMLAN rev4

**Fig. 10: Mode \$06 Data Definitions - Monitor ID 05 (10 Of 28)**

Courtesy of GENERAL MOTORS CORP.

## GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)               | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                                         | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|---------------------------------------|--------------------|------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 05                                    | 90                 | B1                           | Instantaneous Negative Slope of the O2 Sensor Signal – Bank 2 Sensor 1 (calculated) <sup>(16)</sup> | -65536 to +65534 mV/s                                  | 2 mV/s / bit                                                |
| 05                                    | 91                 | 90                           | O2 Sensor Delayed Response - Rich to Lean                                                           | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 05                                    | 91                 | 90                           | O2 Sensor Delayed Response - Rich to Lean Bank 2 Sensor 1 (calculated) <sup>(16)</sup>              | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 05                                    | 92                 | 90                           | O2 Sensor Delayed Response - Lean to Rich                                                           | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 05                                    | 92                 | 90                           | O2 Sensor Delayed Response - Lean to Rich Bank 2 Sensor 1 (calculated) <sup>(16)</sup>              | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 05                                    | 93 <sup>(16)</sup> | 10                           | O2 Sensor Dynamic Period Check – Bank 2 Sensor 1                                                    | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 05                                    | 94 <sup>(16)</sup> | 90                           | O2 Sensor Dynamic Symmetry Check – Bank 2 Sensor 1                                                  | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| Oxygen Sensor Monitor Bank 2 Sensor 2 |                    |                              |                                                                                                     |                                                        |                                                             |
| 06                                    | 05                 | 10                           | Rich to Lean Sensor Transient (Gradient) Time                                                       | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 06                                    | 05                 | 20                           | B2S2 rich-lean switch time in fuel cut-off                                                          | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 06                                    | 07                 | 0A                           | Minimum Sensor Voltage Achieved                                                                     | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 08                 | 0A                           | Maximum Sensor Voltage Achieved                                                                     | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 81 <sup>(9)</sup>  | 0A                           | Sensor Voltage Achieved for below Commanded Target Voltage Functional Check                         | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 82                 | 0A                           | Sensor Voltage Achieved for above Commanded Target Voltage Functional Check                         | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 86                 | 10                           | Rich to Lean Sensor Delay (Response) Time                                                           | 0 to 65535 ms                                          | 1 ms / bit                                                  |
| 06                                    | 8A                 | 24                           | Post Catalyst Sensor Open Test                                                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 06                                    | 8A                 | 24                           | Post Catalyst Sensor Open Test – Bank 2 Sensor 2 <sup>(16)</sup>                                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 06                                    | 8B                 | 0A                           | Post Catalyst Sensor Rich Tests                                                                     | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 8B                 | 0A                           | Post Catalyst Sensor Rich Tests – Bank 2 Sensor 2 <sup>(16)</sup>                                   | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 8C                 | 0A                           | Post Catalyst Sensor Lean Tests                                                                     | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 8C                 | 0A                           | Post Catalyst Sensor Lean Tests – Bank 2 Sensor 2 <sup>(16)</sup>                                   | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 91                 | 0A                           | Post Catalyst Sensor Delayed Initial R/L Response Test                                              | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 92                 | 0A                           | Post Catalyst Sensor Delayed Initial L/R Response Test                                              | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 06                                    | 93                 | 03                           | Post Catalyst Sensor Slow R/L Response Test                                                         | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| 06                                    | 94                 | 03                           | Post Catalyst Sensor Slow L/R Response Test                                                         | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| Oxygen Sensor Monitor Bank 2 Sensor 3 |                    |                              |                                                                                                     |                                                        |                                                             |
| 07                                    | 8A                 | 24                           | Post Catalyst Sensor Open Test                                                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 07                                    | 8A                 | 24                           | Post Catalyst Sensor Open Test – Bank 2 Sensor 3 <sup>(16)</sup>                                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 07                                    | 8B                 | 0A                           | Post Catalyst Sensor Rich Tests                                                                     | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 07                                    | 8B                 | 0A                           | Post Catalyst Sensor Rich Tests – Bank 2 Sensor 3 <sup>(16)</sup>                                   | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |

Footnotes are explained on the last pages of this document.

11 of 34

GMLAN rev4

**Fig. 11: Mode \$06 Data Definitions - Monitor ID 05-07 (11 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                                                     | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                      | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-----------------------------------------------------------------------------|--------------------|------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 07                                                                          | 8C                 | 0A                           | Post Catalyst Sensor Lean Tests                                                  | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 07                                                                          | 8C                 | 0A                           | Post Catalyst Sensor Lean Tests - Bank 2 Sensor 3 <sup>(16)</sup>                | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 07                                                                          | 91                 | 0A                           | Post Catalyst Sensor Delayed Initial R/L Response Test                           | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 07                                                                          | 92                 | 0A                           | Post Catalyst Sensor Delayed Initial L/R Response Test                           | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 07                                                                          | 93                 | 03                           | Post Catalyst Sensor Slow R/L Response Test                                      | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| 07                                                                          | 94                 | 03                           | Post Catalyst Sensor Slow L/R Response Test                                      | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| <b>Catalyst Monitor Bank 1</b> EWMA = Exponentially Weighted Moving Average |                    |                              |                                                                                  |                                                        |                                                             |
| 21                                                                          | 84 <sup>(8)</sup>  | 05                           | Catalyst Test Bank 1 ( normalized ) - EWMA                                       | 0 to 1.999                                             | 0.0000305 / bit                                             |
| 21                                                                          | A0                 | 01                           | Catalyst Test Bank 1 (using Catalyst DFCO Exit Test)                             | 0 to 65535 unitless                                    | 1 count / bit                                               |
| 21                                                                          | A0                 | 05                           | Catalyst Test Bank 1 (using OSC normalized ratio units)                          | 0 to 1.999 unitless                                    | 0.0000305 / bit                                             |
| 21                                                                          | A0                 | 86                           | Catalyst Test Bank 1 (using OSC normalized ratio units)                          | -9.994 to +9.994                                       | 0.000305 / bit                                              |
| 21                                                                          | A0                 | 90                           | Catalyst Test Bank 1 (using OSC compensation units)                              | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 21                                                                          | A0                 | 05                           | Catalyst Diag B1                                                                 | 0 to 1.999 raw value                                   | 0.0000305 / bit                                             |
| 21                                                                          | A1                 | 01                           | Catalyst Test Bank 1 (using Catalyst DFCO Exit Test)                             | 0 to 65535 unitless                                    | 1 count / bit                                               |
| 21                                                                          | A2                 | 06                           | Passive monitoring of the oxidation catalyst efficiency                          | 0 to 19.988 unitless                                   | 0.000305 / bit                                              |
| 21                                                                          | A2                 | 06                           | Passive monitoring of the oxidation catalyst efficiency (Bank 1) <sup>(16)</sup> | 0 to 19.988 unitless                                   | 0.000305 / bit                                              |
| 21                                                                          | A2 <sup>(16)</sup> | 39                           | Passive monitoring of the oxidation catalyst efficiency (Bank 1)                 | -327.68 to +327.68%                                    | 0.01% / bit                                                 |
| 21                                                                          | A3 <sup>(16)</sup> | 84                           | Main Catalyst Efficiency Monitoring                                              | -32.768 to +32.767 unitless                            | 0.001 / bit                                                 |
| 21                                                                          | A4 <sup>(16)</sup> | 84                           | Pre Catalyst Efficiency Monitoring                                               | -32.768 to +32.767 unitless                            | 0.001 / bit                                                 |
| 21                                                                          | A5 <sup>(16)</sup> | 11                           | Regeneration Process Not Efficient (DOC2 Unable to Assist DPF Regeneration)      | 0 to 6553.5 s                                          | 100 ms / bit                                                |
| <b>Catalyst Monitor Bank 2</b> EWMA = Exponentially Weighted Moving Average |                    |                              |                                                                                  |                                                        |                                                             |
| 22                                                                          | 84 <sup>(8)</sup>  | 05                           | Catalyst Test Bank 2 ( normalized ) - EWMA                                       | 0 to 1.999                                             | 0.0000305 / bit                                             |
| 22                                                                          | A0                 | 01                           | Catalyst Test Bank 2 (using Catalyst DFCO Exit Test)                             | 0 to 65535 unitless                                    | 1 count / bit                                               |
| 22                                                                          | A0                 | 05                           | Catalyst Test Bank 2 (using OSC normalized ratio units)                          | 0 to 1.999 unitless                                    | 0.0000305 / bit                                             |
| 22                                                                          | A0                 | 86                           | Catalyst Test Bank 2 (using OSC normalized ratio units)                          | -9.994 to +9.994                                       | 0.000305 / bit                                              |
| 22                                                                          | A0                 | 90                           | Catalyst Test Bank 2 (using OSC compensation units)                              | -32768 to +32767 ms                                    | 1 ms / bit                                                  |
| 22                                                                          | A0                 | 05                           | Catalyst Diag B2                                                                 | 0 to 1.999 raw value                                   | 0.0000305 / bit                                             |
| 22                                                                          | A1 <sup>(16)</sup> | 01                           | Catalyst Test Bank 2 (using Catalyst DFCO Exit Test)                             | 0 to 65535                                             | 1 count / bit                                               |
| <b>EGR Monitor Bank 1</b>                                                   |                    |                              |                                                                                  |                                                        |                                                             |
| 31                                                                          | A0                 | 2F <sup>(15)</sup>           | EGR Slow Response - Increasing Flow                                              | 0 to 655.35%                                           | 0.01% / bit                                                 |

Footnotes are explained on the last pages of this document.

12 of 34

GMLAN rev4

**Fig. 12: Mode \$06 Data Definitions - Monitor ID 07-31 (12 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)   | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                     | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|---------------------------|--------------------|------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 31                        | A0                 | 82 <sup>(14)</sup>           | EGR Slow Response - Increasing Flow                             | -3276.8 to +3276.7 counts                              | 0.1 count / bit                                             |
| 31                        | A1                 | 2F <sup>(15)</sup>           | EGR Slow Response - Decreasing Flow                             | 0 to 655.35%                                           | 0.01% / bit                                                 |
| 31                        | A1                 | 82 <sup>(14)</sup>           | EGR Slow Response - Decreasing Flow                             | -3276.8 to +3276.7 counts                              | 0.1 count / bit                                             |
| 31                        | A2 <sup>(16)</sup> | 05                           | EGR Cooler Efficiency                                           | 0 to 1.999                                             | 0.0000305 / bit                                             |
| 31                        | A2                 | 06                           | EGR Cooler Efficiency                                           | 0 to 19.988 unitless                                   | 0.000305 / bit                                              |
| 31                        | A3                 | 82                           | Excessive EGR                                                   | -3276.8 to +3276.7 counts                              | 0.1 count / bit                                             |
| 31                        | A4                 | 82                           | Insufficient EGR                                                | -3276.8 to +3276.7 counts                              | 0.1 count / bit                                             |
| 31                        | A5 <sup>(16)</sup> | 2F                           | EGR B Slow Response - Increasing Flow                           | 0 to 655.35%                                           | 0.01% / bit                                                 |
| 31                        | A6 <sup>(16)</sup> | 2F                           | EGR B Slow Response - Decreasing Flow                           | 0 to 655.35%                                           | 0.01% / bit                                                 |
| 31                        | A7                 | 05                           | Low Pressure EGR Cooler Efficiency                              | 0 to 1.999969                                          | 0.0000305 / bit                                             |
| 31                        | A8                 | FD                           | EGRF Decel Service Test                                         | -32.768 to +32.767 kPa                                 | 0.001 kPa / bit                                             |
| 31                        | A9 <sup>(5)</sup>  | FD                           | EGRF Quick Test                                                 | -32.768 to +32.767 kPa                                 | 0.001 kPa / bit                                             |
| 31                        | AA                 | 24                           | O2 Positive Concentration Rationality Test                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 31                        | AB                 | 24                           | O2 Negative Concentration Rationality Test                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 31                        | AC                 | 24                           | Throttle Airflow Positive Control Deviation Test                | 0 to 65535 counts                                      | 1 count / bit                                               |
| 31                        | AD                 | 24                           | Throttle Airflow Negative Control Deviation Test                | 0 to 65535 counts                                      | 1 count / bit                                               |
| 31                        | AE                 | 24                           | Airflow Positive Control Deviation Test                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| 31                        | AE <sup>(16)</sup> | 24                           | Excessive EGR flow monitor                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 31                        | AF                 | 24                           | Airflow Negative Control Deviation Test                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| 31                        | AF <sup>(16)</sup> | 24                           | Insufficient EGR flow monitor                                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| <b>VVT Monitor Bank 1</b> |                    |                              |                                                                 |                                                        |                                                             |
| 35                        | 9A <sup>(8)</sup>  | 9C                           | Exhaust Camshaft Slow Response                                  | -327.68° to +327.67°                                   | 0.01° / bit                                                 |
| 35                        | 9B <sup>(8)</sup>  | 9C                           | Exhaust Camshaft Target Error                                   | -327.68° to +327.67°                                   | 0.01° / bit                                                 |
| 35                        | 9D <sup>(8)</sup>  | 9C                           | Intake Camshaft Slow Response                                   | -327.68° to +327.67°                                   | 0.01° / bit                                                 |
| 35                        | 9E <sup>(8)</sup>  | 9C                           | Intake Camshaft Target Error                                    | -327.68° to +327.67°                                   | 0.01° / bit                                                 |
| 35                        | B0                 | 24                           | PHSR Intake CAM Phaser Rationality Test                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                        | B0                 | 24                           | PHSR Intake CAM Phaser Rationality Test Bank 1 <sup>(16)</sup>  | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                        | B1                 | 24                           | PHSR Exhaust CAM Phaser Rationality Test                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                        | B1                 | 24                           | PHSR Exhaust CAM Phaser Rationality Test Bank 1 <sup>(16)</sup> | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                        | B2 <sup>(16)</sup> | AF                           | VVLR Oil Control Valve 1 Stuck in High Test                     | -327.68 to +327.67%                                    | 0.01% / bit                                                 |
| 35                        | B3 <sup>(16)</sup> | AF                           | VVLR Oil Control Valve 1 Stuck in Low Test                      | -327.68 to +327.67%                                    | 0.01% / bit                                                 |
| 35                        | B4 <sup>(16)</sup> | AF                           | VVLR Oil Control Valve 2 Stuck in High Test                     | -327.68 to +327.67%                                    | 0.01% / bit                                                 |
| 35                        | B5 <sup>(16)</sup> | AF                           | VVLR Oil Control Valve 2 Stuck in Low Test                      | -327.68 to +327.67%                                    | 0.01% / bit                                                 |
| 35                        | C0 <sup>(16)</sup> | 24                           | Sliding Cam A Actuator A Profile Actuator Control Performance   | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                        | C1 <sup>(16)</sup> | 24                           | Sliding Cam A Actuator B Profile Actuator Control Performance   | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                        | C2 <sup>(16)</sup> | 24                           | Sliding Cam A Actuator C Profile Actuator Control Performance   | 0 to 65535 counts                                      | 1 count / bit                                               |

Footnotes are explained on the last pages of this document.

13 of 34

GMLAN rev4

**Fig. 13: Mode \$06 Data Definitions - Monitor ID 31-35 (13 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID)     | Units and Scaling ID (UASID) | Description                                                                      | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-------------------------|-------------------|------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 35                      | C3 <sup>(6)</sup> | 24                           | Sliding Cam A Actuator D Profile Actuator Control Performance                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | C4 <sup>(6)</sup> | 24                           | Sliding Cam A Actuator E Profile Actuator Control Performance                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | C5 <sup>(6)</sup> | 24                           | Sliding Cam A Actuator F Profile Actuator Control Performance                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | C6 <sup>(6)</sup> | 24                           | Sliding Cam A Actuator G Profile Actuator Control Performance                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | C7 <sup>(6)</sup> | 24                           | Sliding Cam A Actuator H Profile Actuator Control Performance                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | CA <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator A Pin Position Sensor Performance                | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | CB <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator B Pin Position Sensor Performance                | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | CC <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator C Pin Position Sensor Performance                | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | CD <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator D Pin Position Sensor Performance                | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | CE <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator E Pin Position Sensor Performance                | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | CF <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator F Pin Position Sensor Performance                | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D0 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Profile Control Sleeve Position Sensor A Performance      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D1 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Profile Control Sleeve Position Sensor B Performance      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D2 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator A Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D3 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator B Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D4 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator C Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D5 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator D Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D6 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator E Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D7 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator F Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D8 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator G Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | D9 <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Actuator H Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | DA <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Profile Control Sleeve Position Sensor A Unintended Shift | 0 to 65535 counts                                      | 1 count / bit                                               |
| 35                      | DB <sup>(6)</sup> | 24                           | Sliding Cam A Camshaft Profile Control Sleeve Position Sensor B Unintended Shift | 0 to 65535 counts                                      | 1 count / bit                                               |
| VVT Monitor Bank 2      |                   |                              |                                                                                  |                                                        |                                                             |
| 36                      | 9A <sup>(9)</sup> | 9C                           | Exhaust Camshaft Slow Response                                                   | -327.68° to +327.67°                                   | 0.01° / bit                                                 |
| 36                      | 9B <sup>(9)</sup> | 9C                           | Exhaust Camshaft Target Error                                                    | -327.68° to +327.67°                                   | 0.01° / bit                                                 |
| 36                      | 9D <sup>(9)</sup> | 9C                           | Intake Camshaft Slow Response                                                    | -327.68° to +327.67°                                   | 0.01° / bit                                                 |

Footnotes are explained on the last pages of this document.

14 of 34

GMLAN rev4

**Fig. 14: Mode \$06 Data Definitions - Monitor ID 35-36 (14 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                                  | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                      | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|----------------------------------------------------------|--------------------|------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 36                                                       | 9E <sup>(9)</sup>  | 9C                           | Intake Camshaft Target Error                                                     | -327.68° to +327.67°                                   | 0.01° / bit                                                 |
| 36                                                       | B0                 | 24                           | PHSR Intake CAM Phaser Rationality Test                                          | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | B0                 | 24                           | PHSR Intake CAM Phaser Rationality Test Bank 2 <sup>(16)</sup>                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | B1                 | 24                           | PHSR Exhaust CAM Phaser Rationality Test                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | B1                 | 24                           | PHSR Exhaust CAM Phaser Rationality Test Bank 2 <sup>(16)</sup>                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C0 <sup>(6)</sup>  | 24                           | Sliding Cam B Actuator A Profile Actuator Control Performance                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C1 <sup>(6)</sup>  | 24                           | Sliding Cam B Actuator B Profile Actuator Control Performance                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C2 <sup>(6)</sup>  | 24                           | Sliding Cam B Actuator C Profile Actuator Control Performance                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C3 <sup>(6)</sup>  | 24                           | Sliding Cam B Actuator D Profile Actuator Control Performance                    | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C4 <sup>(6)</sup>  | 24                           | Sliding Cam B Camshaft Profile Control Sleeve Position Sensor A Performance      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C5 <sup>(6)</sup>  | 24                           | Sliding Cam B Camshaft Profile Control Sleeve Position Sensor B Performance      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C6 <sup>(6)</sup>  | 24                           | Sliding Cam B Camshaft Actuator A Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C7 <sup>(6)</sup>  | 24                           | Sliding Cam B Camshaft Actuator B Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C8 <sup>(6)</sup>  | 24                           | Sliding Cam B Camshaft Actuator C Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | C9 <sup>(6)</sup>  | 24                           | Sliding Cam B Camshaft Actuator D Pin Stuck                                      | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | CA <sup>(6)</sup>  | 24                           | Sliding Cam B Camshaft Profile Control Sleeve Position Sensor A Unintended Shift | 0 to 65535 counts                                      | 1 count / bit                                               |
| 36                                                       | CB <sup>(6)</sup>  | 24                           | Sliding Cam B Camshaft Profile Control Sleeve Position Sensor B Unintended Shift | 0 to 65535 counts                                      | 1 count / bit                                               |
| EVAP Monitor (Cap off)                                   |                    |                              |                                                                                  |                                                        |                                                             |
| 39                                                       | 39 <sup>(11)</sup> | FE                           | Cap Off/gross Leak                                                               | -8192 to +8191.75 Pa                                   | 0.25 Pa / bit                                               |
| 39                                                       | 3A <sup>(1)</sup>  | 32                           | Large leak                                                                       | 0 to 1.999 inch                                        | 0.0000305 / bit                                             |
| 39                                                       | 3B <sup>(2)</sup>  |                              |                                                                                  |                                                        |                                                             |
| 39                                                       | 80                 | 81                           | EVAP Tank Gross Leak                                                             | -32768 to +32767                                       | 1 / bit                                                     |
| 39                                                       | B0                 | FE                           | Cap Off/gross Leak                                                               | -8192 to +8191.75 Pa                                   | 0.25 Pa / bit                                               |
| 39                                                       | B1                 | 32                           | Large leak                                                                       | 0 to 1.999 inch                                        | 0.0000305 / bit                                             |
| EVAP Monitor (Large) EVPD = Evap Pressure / Vacuum Decay |                    |                              |                                                                                  |                                                        |                                                             |
| 3A                                                       | C0 <sup>(12)</sup> | 31                           | EVPD Weak Vacuum Test scaled in liters                                           | 0.0 to 65.535 liters                                   | 0.001 liters / bit                                          |
| 3A                                                       | C0                 | 3F                           | EVPD Weak Vacuum Test (scaled in liters)                                         | 0.0 to 65.535 liters                                   | 0.01 liters / bit                                           |
| 3A                                                       | C0                 | FD                           | EVPD Weak Vacuum Test scaled in kPa                                              | -32.768 to +32.767 kPa                                 | 0.001 kPa / bit                                             |
| 3A                                                       | C1                 | 11                           | EVPD Weak Vac Flwup Test                                                         | 0 to 6553.5 s                                          | 100 ms / bit                                                |
| 3A                                                       | EC                 | 0A                           | EVPD_NV LargeLeak_EREV_Test1 (scaled in Volts)                                   | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |

Footnotes are explained on the last pages of this document.

15 of 34

GMLAN rev4

**Fig. 15: Mode \$06 Data Definitions - Monitor ID 36-3A (15 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                                                                                                                                                               | Test ID (TID) | Units and Scaling ID (UASID) | Description                                                                               | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 3A                                                                                                                                                                                    | ED            | 0A                           | EVPD NV LargeLeak EREV Test2 (scaled in Volts)                                            | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 3A                                                                                                                                                                                    | EE            | FD                           | EVPD NV LargeLeak EREV Test3 (scaled in kPa)                                              | -32.768 to +32.767 kPa                                 | 0.001 kPa / bit                                             |
| EVAP Monitor 0.040" EVPD = Evap Pressure / Vacuum Decay                                                                                                                               |               |                              |                                                                                           |                                                        |                                                             |
| 3B                                                                                                                                                                                    | C2            | 32                           | EVPD NV 0.040 Test scaled in inches                                                       | 0.000 to 1.999 inches                                  | 0.0000305 inches / bit                                      |
| 3B                                                                                                                                                                                    | C2            | B0                           | EVPD NV 0.040 Test scaled in percentage slope                                             | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| EVAP Monitor 0.020" EVPD = Evap Pressure / Vacuum Decay<br>EWMA = Exponentially Weighted Moving Average<br>EONV = Engine Off Natural Vacuum<br>EREV = Extended Range Electric Vehicle |               |                              |                                                                                           |                                                        |                                                             |
| 3C                                                                                                                                                                                    | 80            | 05                           | EONV NV 0.020 Test - EWMA                                                                 | 0 to 1.999                                             | 0.0000305 / bit                                             |
| 3C                                                                                                                                                                                    | C3            | 32                           | EVPD NV 0.020 Test scaled in inches                                                       | 0.000 to 1.999 inches                                  | 0.0000305 inches / bit                                      |
| 3C                                                                                                                                                                                    | C3            | B0                           | EVPD NV 0.020 Test scaled in percentage slope                                             | -100.01 to +100.00%                                    | 0.003052% / bit                                             |
| 3C                                                                                                                                                                                    | C8            | 20                           | EONV NV 0.020 Test for EONV                                                               | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 3C                                                                                                                                                                                    | C8            | 20                           | EONV NV 020_Test (For EONV Spec Version 22.1.1 and later) <sup>(16)</sup>                 | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 3C                                                                                                                                                                                    | C8            | FD                           | EONV NV 0.020 Test for EONV                                                               | -32.768 to +32.767 kPa                                 | 0.001 kPa / bit                                             |
| 3C                                                                                                                                                                                    | C8            | FD                           | EONV NV 020 Test (For EONV Spec Version 22.0.0 and prior) <sup>(16)</sup>                 | -32.768 to +32.767 kPa                                 | 0.001 kPa / bit                                             |
| 3C                                                                                                                                                                                    | C8            | 05                           | EONV 0.020" leak                                                                          | 0 to 1.999 raw value                                   | 0.0000305 / bit                                             |
| 3C                                                                                                                                                                                    | C9            | FE                           | Canister Vent Valve 'stuck closed'                                                        | -8192 to +8191.75 Pa                                   | 0.25 Pa / bit                                               |
| 3C                                                                                                                                                                                    | C9            | 20                           | EONV Vacuum Rezero Test for EONV                                                          | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 3C                                                                                                                                                                                    | C9            | 20                           | EONV Vacuum Rezero Test (For EONV Spec Version 30.0.0 and later) <sup>(16)</sup>          | 0 to 255.996                                           | 0.0039062 / bit                                             |
| 3C                                                                                                                                                                                    | CA            | 24                           | EONV Fuel Level Rationality Test for EONV                                                 | 0 to 65535 counts                                      | 1 count / bit                                               |
| 3C                                                                                                                                                                                    | CA            | 24                           | EONV Fuel Level Rationality Test (For EONV Spec Version 30.0.0 and later) <sup>(16)</sup> | 0 to 65535 counts                                      | 1 count / bit                                               |
| 3C                                                                                                                                                                                    | CB            | FE                           | Canister Purge Valve 'stuck open'                                                         | -8192 to +8191.75 Pa                                   | 0.25 Pa / bit                                               |
| 3C                                                                                                                                                                                    | CB            | 24                           | EONV Vacuum Rationality Test for EONV                                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| 3C                                                                                                                                                                                    | CB            | 24                           | EONV Vacuum Rationality Test (For EONV Spec Version 30.0.0 and later) <sup>(16)</sup>     | 0 to 65535 counts                                      | 1 count / bit                                               |
| 3C                                                                                                                                                                                    | E0            | 0A                           | EVPD NV 020 EREV Test1 (scaled in Volts)                                                  | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 3C                                                                                                                                                                                    | E0            | 0A                           | EVAP Small Leak, Fast PASS Hi <sup>(16)</sup>                                             | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 3C                                                                                                                                                                                    | E1            | 0A                           | EVPD NV 020 EREV Test2 (scaled in Volts)                                                  | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 3C                                                                                                                                                                                    | E1            | 0A                           | EVAP Small Leak, Fast PASS Lo <sup>(16)</sup>                                             | 0.0000 to 7.9900 Volts                                 | 0.122 mV / bit                                              |
| 3C                                                                                                                                                                                    | E2            | FD                           | EVPD NV 020 EREV Test3 (scaled in kPa)                                                    | -32.768 to +32.767 kPa                                 | 0.001 kPa / bit                                             |
| 3C                                                                                                                                                                                    | E2            | FD                           | EVAP Small Leak, PASS/FAIL <sup>(16)</sup>                                                | -32.768 to +32.767 kPa                                 | 0.001 kPa / bit                                             |

Footnotes are explained on the last pages of this document.

16 of 34

GMLAN rev4

**Fig. 16: Mode \$06 Data Definitions - Monitor ID 3A-3C (16 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                                | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                          | Range For Information ONLY Source information is J1979       | Resolution For Information ONLY Source information is J1979 |
|--------------------------------------------------------|--------------------|------------------------------|------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------|
| 3C                                                     | E3                 | FD                           | EREV LeakBetweenDCV LDP Test1(scaled in kPa)         | -32.768 to +32.767 kPa                                       | 0.001 kPa / bit                                             |
| 3C                                                     | E3                 | FD                           | EVAP LeakBtwDCV LDP PASS/FAIL <sup>(16)</sup>        | -32.768 to +32.767 kPa                                       | 0.001 kPa / bit                                             |
| 3C                                                     | E4                 | 2E                           | EREV VentValveStuckOpen Test1                        | FALSE, TRUE                                                  | N/A                                                         |
| 3C                                                     | E4                 | 2E                           | EVAP VentVlvStkOpen, Fast PASS <sup>(16)</sup>       | FALSE, TRUE                                                  | N/A                                                         |
| 3C                                                     | E5                 | FE                           | EREV VentValveStuckOpen Test2 (scaled in inH2O)      | -8192 to +8191.75 Pa or approx -32.768 to +32.767 inches H2O | 0.25 Pa per bit or approx 0.001 inches H2O per bit          |
| 3C                                                     | E6                 | 2E                           | EREV VentValveStuckCld Test1                         | FALSE, TRUE                                                  | N/A                                                         |
| 3C                                                     | E7                 | FE                           | EREV VentValveStuckCld Test2 (scaled in inH2O)       | -8192 to +8191.75 Pa or approx -32.768 to +32.767 inches H2O | 0.25 Pa per bit or approx 0.001 inches H2O per bit          |
| 3C                                                     | E8                 | FD                           | EREV VentValveStuckCld Test3 (scaled in kPa)         | -32.768 to +32.767 kPa                                       | 0.001 kPa / bit                                             |
| 3C                                                     | E9 <sup>(16)</sup> | FD                           | ELCP Pump To Fuel Tank Restriction, PASS/FAIL        | -32.768 to +32.767 kPa                                       | 0.001 kPa / bit                                             |
| Purge Flow Monitor EVPD = Evap Pressure / Vacuum Decay |                    |                              |                                                      |                                                              |                                                             |
| 3D                                                     | 88                 | 81                           | Purge Valve Flow Test - Stuck Open / Leak            | -32768 to +32767                                             | 1 / bit                                                     |
| 3D                                                     | 8C                 | 81                           | Canister Vent Valve Test - Stuck Closed / Restricted | -32768 to +32767                                             | 1 / bit                                                     |
| 3D                                                     | C4                 | 11                           | EVPD NV Purge Pass Test                              | 0 to 6553.5 s                                                | 100 ms / bit                                                |
| 3D                                                     | C5                 | FE                           | EVPD Purge Vac Fail Test                             | -8192 to +8191.75 Pa or approx -32.768 to +32.767 inches H2O | 0.25 Pa per bit or approx 0.001 inches H2O per bit          |
| 3D                                                     | C6 <sup>(5)</sup>  | 11                           | EVPD Vent Rest Test 1                                | 0 to 6553.5 s                                                | 100 ms / bit                                                |
| 3D                                                     | C7                 | FD                           | EVPD Vent Rest Test 2 - scaled in kPa                | -32.768 to +32.767 kPa                                       | 0.001 kPa / bit                                             |
| 3D                                                     | C7                 | 31                           | EVPD Vent Rest Test 2 - scaled in liters             | 0.0 to 65.535 liters                                         | 0.001 liters / bit                                          |
| 3D                                                     | EA                 | FE                           | EREV_VentSystemPerf_Test (scaled in inH2O)           | -8192 to +8191.75 Pa or approx -32.768 to +32.767 inches H2O | 0.25 Pa per bit or approx 0.001 inches H2O per bit          |
| 3D                                                     | EB                 | FD                           | EREV_PurgeValveFlow_Test (scaled in kPa)             | -32.768 to +32.767 kPa                                       | 0.001 kPa / bit                                             |
| 3D                                                     | EC                 | 24                           | EREV_VentSysPerf_Test (scaled in counts)             | 0 to 65535 counts                                            | 1 count / bit                                               |
| 3D                                                     | ED <sup>(16)</sup> | 24                           | EVAP_PurgePumpSpdOff                                 | 0 to 65535 counts                                            | 1 count / bit                                               |
| 3D                                                     | EE <sup>(16)</sup> | 24                           | EVAP_PurgePumpSpdOn                                  | 0 to 65535 counts                                            | 1 count / bit                                               |
| 3D                                                     | EF <sup>(16)</sup> | FD                           | EVAP_PurgePumpSysPerf                                | -32.768 to +32.767 kPa                                       | 0.001 kPa / bit                                             |
| 3D                                                     | F0 <sup>(16)</sup> | FD                           | EVAP_PurgePumpMisAsm                                 | -32.768 to +32.767 kPa                                       | 0.001 kPa / bit                                             |
| 3D                                                     | F1 <sup>(16)</sup> | 20                           | EVAP_PurgePumpPresPerf                               | 0 to 255.996                                                 | 0.0039062 / bit                                             |
| Oxygen Sensor Heater Monitor Bank 1 Sensor 1           |                    |                              |                                                      |                                                              |                                                             |
| 41                                                     | 81 <sup>(9)</sup>  | 14                           | Sensor Element Impedance                             | 0 to 65535 Ohms                                              | 1Ω / bit                                                    |

Footnotes are explained on the last pages of this document.

17 of 34

GMLAN rev4

**Fig. 17: Mode \$06 Data Definitions - Monitor ID 3C-41 (17 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                      | Test ID (TID)     | Units and Scaling ID (UASID) | Description                                                        | Range For Information ONLY. Source information is J1979 | Resolution For Information ONLY. Source information is J1979 |
|----------------------------------------------|-------------------|------------------------------|--------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| 41                                           | 85                | 16                           | Heater Temperature                                                 | -40 to 6513.5°C                                         | 0.1 °C / bit - 40°C                                          |
| 41                                           | 86 <sup>(6)</sup> | 10                           | Particulate Matter Sensor Heater Performance                       | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 41                                           | D0                | 11                           | Time to Activity Monitor                                           | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 41                                           | D0                | 11                           | Time to Activity Monitor – Bank 1 Sensor 1 <sup>(6)</sup>          | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 41                                           | D0 <sup>(6)</sup> | 11                           | Time to Activity Monitor – Bank 1 Sensor 1 (Diesel Nox)            | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 41                                           | D1                | 0F                           | Current Feedback Amps Value Test                                   | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 41                                           | D1                | 0F                           | Current Feedback Amps Value Test – Bank 1 Sensor 1 <sup>(6)</sup>  | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 41                                           | D2                | 24                           | Current Feedback X/Y Samples Test                                  | 0 to 65535 counts                                       | 1 count / bit                                                |
| 41                                           | D2                | 24                           | Current Feedback X/Y Samples Test – Bank 1 Sensor 1 <sup>(6)</sup> | 0 to 65535 counts                                       | 1 count / bit                                                |
| 41                                           | D3                | 84                           | Heater Resistance Error Test                                       | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 41                                           | D3                | 84                           | Heater Resistance Error Test – Bank 1 Sensor 1 <sup>(6)</sup>      | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 41                                           | D3                | 11                           | Sensor Heater Monitor B1S1 'operative readiness time'              | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 41                                           | D4                | 96                           | Sensor Heater Monitor B1S1 'tip temperature out of range'          | -3276.8 to +3276.7°C                                    | 0.1°C / bit                                                  |
| 41                                           | D4                | 24                           | UEGO Heater Temperature Test                                       | 0 to 65535 counts                                       | 1 count / bit                                                |
| 41                                           | D4                | 24                           | UEGO Heater Temperature Test – Bank 1 Sensor 1 <sup>(6)</sup>      | 0 to 65535 counts                                       | 1 count / bit                                                |
| 41                                           | D9 <sup>(6)</sup> | 24                           | UEGO Heater Temperature Test – Bank 1 Sensor 1                     | 0 to 65535 counts                                       | 1 count / bit                                                |
| 41                                           | EA                | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 1  | 0 to 65535 counts                                       | 1 count / bit                                                |
| 41                                           | EC <sup>(6)</sup> | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 1  | 0 to 65535 counts                                       | 1 count / bit                                                |
| 41                                           | FA <sup>(6)</sup> | 11                           | Particulate Matter Sensor Heater Successful Regeneration -Sensor 1 | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| Oxygen Sensor Heater Monitor Bank 1 Sensor 2 |                   |                              |                                                                    |                                                         |                                                              |
| 42                                           | 81 <sup>(8)</sup> | 14                           | Sensor Element Impedance                                           | 0 to 65535 Ohms                                         | 1Ω / bit                                                     |
| 42                                           | 86 <sup>(6)</sup> | 10                           | Particulate Matter Sensor Heater Performance                       | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 42                                           | D0                | 11                           | Time to Activity Monitor                                           | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 42                                           | D0                | 11                           | Time to Activity Monitor – Bank 1 Sensor 2 <sup>(6)</sup>          | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 42                                           | D1                | 0F                           | Current Feedback Amps Value Test                                   | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 42                                           | D1                | 0F                           | Current Feedback Amps Value Test – Bank 1 Sensor 2 <sup>(6)</sup>  | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 42                                           | D2                | 24                           | Current Feedback X/Y Samples Test                                  | 0 to 65535 counts                                       | 1 count / bit                                                |
| 42                                           | D2                | 24                           | Current Feedback X/Y Samples Test – Bank 1 Sensor 2 <sup>(6)</sup> | 0 to 65535 counts                                       | 1 count / bit                                                |
| 42                                           | D3                | 84                           | Heater Resistance Error Test                                       | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 42                                           | D3                | 84                           | Heater Resistance Error Test – Bank 1 Sensor 2 <sup>(6)</sup>      | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |

Footnotes are explained on the last pages of this document.

18 of 34

GMLAN rev4

**Fig. 18: Mode \$06 Data Definitions - Monitor ID 41-42 (18 Of 28)**  
Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                      | Test ID (TID)     | Units and Scaling ID (UASID) | Description                                                            | Range For Information ONLY. Source information is J1979 | Resolution For Information ONLY. Source information is J1979 |
|----------------------------------------------|-------------------|------------------------------|------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| 42                                           | D4 <sup>(6)</sup> | 96                           | UEGO Heater Temperature Test                                           | -3276.8 to +3276.7°C                                    | 0.1°C / bit                                                  |
| 42                                           | D5                | 14                           | Sensor Heater Monitor B1S2 'resistance out of range'                   | 0 to 65535 ohms                                         | 1Ω / bit                                                     |
| 42                                           | D9 <sup>(6)</sup> | 24                           | UEGO Heater Temperature Test – Bank 1 Sensor 2                         | 0 to 65535 counts                                       | 1 count / bit                                                |
| 42                                           | EA                | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 2      | 0 to 65535 counts                                       | 1 count / bit                                                |
| 42                                           | EC <sup>(6)</sup> | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 2      | 0 to 65535 counts                                       | 1 count / bit                                                |
| 42                                           | FA <sup>(6)</sup> | 11                           | Particulate Matter Sensor Heater Successful Regeneration -Sensor 2     | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| Oxygen Sensor Heater Monitor Bank 1 Sensor 3 |                   |                              |                                                                        |                                                         |                                                              |
| 43                                           | 86                | 10                           | Particulate Matter Sensor Heater Performance                           | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 43                                           | D0                | 11                           | Time to Activity Monitor                                               | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 43                                           | D0                | 11                           | Time to Activity Monitor – Bank 1 Sensor 2 (Diesel Nox) <sup>(6)</sup> | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 43                                           | D0                | 11                           | Time to Activity Monitor – Bank 1 Sensor 3 <sup>(6)</sup>              | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 43                                           | D1                | 0F                           | Current Feedback Amps Value Test                                       | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 43                                           | D1                | 0F                           | Current Feedback Amps Value Test – Bank 1 Sensor 3 <sup>(6)</sup>      | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 43                                           | D2                | 24                           | Current Feedback X/Y Samples Test                                      | 0 to 65535 counts                                       | 1 count / bit                                                |
| 43                                           | D2                | 24                           | Current Feedback X/Y Samples Test – Bank 1 Sensor 3 <sup>(6)</sup>     | 0 to 65535 counts                                       | 1 count / bit                                                |
| 43                                           | D3                | 84                           | Heater Resistance Error Test                                           | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 43                                           | D3                | 84                           | Heater Resistance Error Test – Bank 1 Sensor 3 <sup>(6)</sup>          | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 43                                           | D9 <sup>(6)</sup> | 24                           | UEGO Heater Temperature Test – Bank 1 Sensor 3                         | 0 to 65535 counts                                       | 1 count / bit                                                |
| 43                                           | E0                | 11                           | Particulate Matter Sensor Heater Successful Regeneration               | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 43                                           | E0 <sup>(6)</sup> | 2F                           | Particulate Matter Sensor Regeneration Success                         | 0 to 655.35%                                            | 0.01% / bit                                                  |
| 43                                           | EA <sup>(6)</sup> | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 3      | 0 to 65535 counts                                       | 1 count / bit                                                |
| 43                                           | EC <sup>(6)</sup> | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 3      | 0 to 65535 counts                                       | 1 count / bit                                                |
| 43                                           | FA <sup>(6)</sup> | 11                           | Particulate Matter Sensor Heater Successful Regeneration               | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| Oxygen Sensor Heater Monitor Bank 1 Sensor 4 |                   |                              |                                                                        |                                                         |                                                              |
| 44                                           | 86 <sup>(6)</sup> | 10                           | Particulate Matter Sensor Heater Performance                           | 0 to 65535 ms                                           | 1 ms / bit                                                   |
| 44                                           | D3 <sup>(6)</sup> | 13                           | Heater Resistance Error Test                                           | 0.0 to 65535 mΩ                                         | 1 mΩ / bit                                                   |
| 44                                           | D9 <sup>(6)</sup> | 24                           | UEGO Heater Temperature Test – Bank 1 Sensor 4                         | 0 to 65535 counts                                       | 1 count / bit                                                |

Footnotes are explained on the last pages of this document.

19 of 34

GMLAN rev4

**Fig. 19: Mode \$06 Data Definitions - Monitor ID 42-44 (19 Of 28)**  
Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                      | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                         | Range For Information ONLY. Source information is J1979 | Resolution For Information ONLY. Source information is J1979 |
|----------------------------------------------|--------------------|------------------------------|---------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| 44                                           | EA <sup>(16)</sup> | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 4   | 0 to 65535 counts                                       | 1 count / bit                                                |
| 44                                           | EC <sup>(16)</sup> | 24                           | NOx Sensor Heater Sense Circuit Range/Performance Bank 1 Sensor 4   | 0 to 65535 counts                                       | 1 count / bit                                                |
| 44                                           | FA <sup>(16)</sup> | 11                           | Particular Matter Sensor Heater Successful Regeneration -Sensor 4   | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| Oxygen Sensor Heater Monitor Bank 2 Sensor 1 |                    |                              |                                                                     |                                                         |                                                              |
| 45                                           | 81 <sup>(16)</sup> | 14                           | Sensor Element Impedance                                            | 0 to 65535 Ohms                                         | 1Ω / bit                                                     |
| 45                                           | D0                 | 11                           | Time to Activity Monitor                                            | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 45                                           | D0                 | 11                           | Time to Activity Monitor – Bank 2 Sensor 1 <sup>(16)</sup>          | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 45                                           | D1                 | 0F                           | Current Feedback Amps Value Test                                    | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 45                                           | D1                 | 0F                           | Current Feedback Amps Value Test – Bank 2 Sensor 1 <sup>(16)</sup>  | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 45                                           | D2                 | 24                           | Current Feedback X/Y Samples Test                                   | 0 to 65535 counts                                       | 1 count / bit                                                |
| 45                                           | D2                 | 24                           | Current Feedback X/Y Samples Test – Bank 2 Sensor 1 <sup>(16)</sup> | 0 to 65535 counts                                       | 1 count / bit                                                |
| 45                                           | D3                 | 84                           | Heater Resistance Error Test                                        | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 45                                           | D3                 | 84                           | Heater Resistance Error Test – Bank 2 Sensor 1 <sup>(16)</sup>      | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 45                                           | D3                 | 11                           | Sensor Heater Monitor B2S1 'operative readiness time'               | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 45                                           | D4                 | 96                           | Sensor Heater Monitor B2S1 'tip temperature out of range'           | -3276.8 to +3276.7°C                                    | 0.1°C / bit                                                  |
| Oxygen Sensor Heater Monitor Bank 2 Sensor 2 |                    |                              |                                                                     |                                                         |                                                              |
| 46                                           | 81 <sup>(16)</sup> | 14                           | Sensor Element Impedance                                            | 0 to 65535 Ohms                                         | 1Ω / bit                                                     |
| 46                                           | D0                 | 11                           | Time to Activity Monitor                                            | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 46                                           | D0                 | 11                           | Time to Activity Monitor – Bank 2 Sensor 2 <sup>(16)</sup>          | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 46                                           | D1                 | 0F                           | Current Feedback Amps Value Test                                    | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 46                                           | D1                 | 0F                           | Current Feedback Amps Value Test – Bank 2 Sensor 2 <sup>(16)</sup>  | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 46                                           | D2                 | 24                           | Current Feedback X/Y Samples Test                                   | 0 to 65535 counts                                       | 1 count / bit                                                |
| 46                                           | D2                 | 24                           | Current Feedback X/Y Samples Test – Bank 2 Sensor 2 <sup>(16)</sup> | 0 to 65535 counts                                       | 1 count / bit                                                |
| 46                                           | D3                 | 84                           | Heater Resistance Error Test                                        | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 46                                           | D3                 | 84                           | Heater Resistance Error Test – Bank 2 Sensor 2 <sup>(16)</sup>      | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 46                                           | D5                 | 14                           | Sensor Heater Monitor B2S2 'resistance out of range'                | 0 to 65535 ohms                                         | 1Ω / bit                                                     |

Footnotes are explained on the last pages of this document.

20 of 34

GMLAN rev4

**Fig. 20: Mode \$06 Data Definitions - Monitor ID 44-46 (20 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                      | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                        | Range For Information ONLY. Source information is J1979 | Resolution For Information ONLY. Source information is J1979 |
|----------------------------------------------|--------------------|------------------------------|--------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| Oxygen Sensor Heater Monitor Bank 2 Sensor 3 |                    |                              |                                                                    |                                                         |                                                              |
| 47                                           | D0                 | 11                           | Time to Activity Monitor                                           | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 47                                           | D0                 | 11                           | Time to Activity Monitor – Bank 2 Sensor 3 <sup>(16)</sup>         | 0 to 6553.5 s                                           | 100 ms / bit                                                 |
| 47                                           | D1                 | 0F                           | Current Feedback Amps Value Test                                   | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 47                                           | D1                 | 0F                           | Current Feedback Amps Value Test– Bank 2 Sensor 3 <sup>(16)</sup>  | 0.00 to 655.35 A                                        | 0.01 A / bit                                                 |
| 47                                           | D2                 | 24                           | Current Feedback X/Y Samples Test                                  | 0 to 65535 counts                                       | 1 count / bit                                                |
| 47                                           | D2                 | 24                           | Current Feedback X/Y Samples Test– Bank 2 Sensor 3 <sup>(16)</sup> | 0 to 65535 counts                                       | 1 count / bit                                                |
| 47                                           | D3                 | 84                           | Heater Resistance Error Test                                       | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| 47                                           | D3                 | 84                           | Heater Resistance Error Test – Bank 2 Sensor 3 <sup>(16)</sup>     | -32.768 to +32.767 differential ohms                    | 0.001Ω / bit                                                 |
| Secondary AIR Monitor 1                      |                    |                              |                                                                    |                                                         |                                                              |
| 71                                           | E0                 | 24                           | AIR Bank 1 Test                                                    | 0 to 65535 counts                                       | 1 count / bit                                                |
| 71                                           | E1                 | FD                           | AIR On Pressure Error Test Bank 1                                  | -32.768 to +32.767 kPa                                  | 0.001 kPa / bit                                              |
| 71                                           | E2                 | FD                           | AIR Valve Shut Pressure Error Test Bank 1                          | -32.768 to +32.767 kPa                                  | 0.001 kPa / bit                                              |
| 71                                           | E3                 | FD                           | AIR Pump Off Pressure Error Test Bank 1                            | -32.768 to +32.767 kPa                                  | 0.001 kPa / bit                                              |
| 71                                           | E5                 | 02                           | AIR Pump On Pressure Variation Test Bank 1                         | 0 to 6553.5 unitless                                    | 0.1 / bit                                                    |
| Secondary AIR Monitor 2                      |                    |                              |                                                                    |                                                         |                                                              |
| 72                                           | E0                 | 24                           | AIR Bank 2 Test                                                    | 0 to 65535 counts                                       | 1 count / bit                                                |
| 72                                           | E1                 | FD                           | AIR On Pressure Error Test Bank 2                                  | -32.768 to +32.767 kPa                                  | 0.001 kPa / bit                                              |
| 72                                           | E2                 | FD                           | AIR Valve Shut Pressure Error Test Bank 2                          | -32.768 to +32.767 kPa                                  | 0.001 kPa / bit                                              |
| 72                                           | E3                 | FD                           | AIR Pump Off Pressure Error Test Bank 2                            | -32.768 to +32.767 kPa                                  | 0.001 kPa / bit                                              |
| 72                                           | E4                 | FD                           | AIR On Pressure Differential, between Bank 1 and Bank 2            | -32.768 to +32.767 kPa                                  | 0.001 kPa / bit                                              |
| 72                                           | E5                 | 02                           | AIR Pump On Pressure Variation Test Bank 2                         | 0 to 6553.5 unitless                                    | 0.1 / bit                                                    |
| 72                                           | E6 <sup>(16)</sup> | 05                           | AIR Pump On Pressure Variation Ratio Between Bank 1 and Bank 2     | 0 to 1.9999695                                          | 0.0000305 / bit                                              |
| Fuel System Monitor Bank 1                   |                    |                              |                                                                    |                                                         |                                                              |
| 81                                           | A1                 | 3C <sup>(14)</sup>           | Cylinder 1 Injection Timing Advanced                               | 0 to 6553.5 μs                                          | 0.1 μs / bit                                                 |
| 81                                           | A1                 | 8F <sup>(15)</sup>           | Cylinder 1 Injection Timing Advanced                               | -32768 to 32767 μs                                      | 1 μs / bit                                                   |
| 81                                           | A2                 | 3C <sup>(14)</sup>           | Cylinder 2 Injection Timing Advanced                               | 0 to 6553.5 μs                                          | 0.1 μs / bit                                                 |
| 81                                           | A2                 | 8F <sup>(15)</sup>           | Cylinder 2 Injection Timing Advanced                               | -32768 to 32767 μs                                      | 1 μs / bit                                                   |

Footnotes are explained on the last pages of this document.

21 of 34

GMLAN rev4

**Fig. 21: Mode \$06 Data Definitions - Monitor ID 47-81 (21 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                         | Range For Information ONLY. Source information is J1979 | Resolution For Information ONLY. Source information is J1979 |
|-------------------------|--------------------|------------------------------|---------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| 81                      | A3                 | 3C <sup>(14)</sup>           | Cylinder 3 Injection Timing Advanced                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | A3                 | 8F <sup>(15)</sup>           | Cylinder 3 Injection Timing Advanced                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | A4                 | 3C <sup>(14)</sup>           | Cylinder 4 Injection Timing Advanced                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | A4                 | 8F <sup>(15)</sup>           | Cylinder 4 Injection Timing Advanced                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | A5                 | 3C <sup>(14)</sup>           | Cylinder 5 Injection Timing Advanced                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | A5                 | 8F <sup>(15)</sup>           | Cylinder 5 Injection Timing Advanced                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | A6                 | 3C <sup>(14)</sup>           | Cylinder 6 Injection Timing Advanced                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | A6                 | 8F <sup>(15)</sup>           | Cylinder 6 Injection Timing Advanced                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | A7                 | 3C <sup>(14)</sup>           | Cylinder 7 Injection Timing Advanced                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | A7                 | 8F <sup>(15)</sup>           | Cylinder 7 Injection Timing Advanced                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | A8                 | 3C <sup>(14)</sup>           | Cylinder 8 Injection Timing Advanced                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | A8                 | 8F <sup>(15)</sup>           | Cylinder 8 Injection Timing Advanced                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | B1 <sup>(16)</sup> | 84                           | Air Fuel Imbalance Monitor Variance Ratio EWMA-Normal Mode Bank 1   | -32.768 to +32.767 unitless                             | 0.001 / bit                                                  |
| 81                      | B2 <sup>(16)</sup> | 84                           | Air Fuel Imbalance Monitor Variance Ratio EWMA-Optional Mode Bank 1 | -32.768 to +32.767 unitless                             | 0.001 / bit                                                  |
| 81                      | D1                 | 3C <sup>(14)</sup>           | Cylinder 1 Injection Timing Retarded                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | D1                 | 8F <sup>(15)</sup>           | Cylinder 1 Injection Timing Retarded                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | D2                 | 3C <sup>(14)</sup>           | Cylinder 2 Injection Timing Retarded                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | D2                 | 8F <sup>(15)</sup>           | Cylinder 2 Injection Timing Retarded                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | D3                 | 3C <sup>(14)</sup>           | Cylinder 3 Injection Timing Retarded                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | D3                 | 8F <sup>(15)</sup>           | Cylinder 3 Injection Timing Retarded                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | D4                 | 3C <sup>(14)</sup>           | Cylinder 4 Injection Timing Retarded                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 91                      | D4                 | 8F <sup>(15)</sup>           | Cylinder 4 Injection Timing Retarded                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | D5                 | 3C <sup>(14)</sup>           | Cylinder 5 Injection Timing Retarded                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | D5                 | 8F <sup>(15)</sup>           | Cylinder 5 Injection Timing Retarded                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | D6                 | 3C <sup>(14)</sup>           | Cylinder 6 Injection Timing Retarded                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 91                      | D6                 | 8F <sup>(15)</sup>           | Cylinder 6 Injection Timing Retarded                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | D7                 | 3C <sup>(14)</sup>           | Cylinder 7 Injection Timing Retarded                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | D7                 | 8F <sup>(15)</sup>           | Cylinder 7 Injection Timing Retarded                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | D8                 | 3C <sup>(14)</sup>           | Cylinder 8 Injection Timing Retarded                                | 0 to 6553.5 $\mu$ s                                     | 0.1 $\mu$ s / bit                                            |
| 81                      | D8                 | 8F <sup>(15)</sup>           | Cylinder 8 Injection Timing Retarded                                | -32768 to 32767 $\mu$ s                                 | 1 $\mu$ s / bit                                              |
| 81                      | E0                 | 24 <sup>(15)</sup>           | A/F Ratio Deviation Max                                             | 0 to 65535 counts                                       | 1 count / bit                                                |
| 81                      | E0                 | 83 <sup>(14)</sup>           | A/F Ratio Deviation Max                                             | -327.68 to +327.67                                      | 0.01 / bit hex to decimal                                    |
| 81                      | E1                 | 24 <sup>(15)</sup>           | A/F Ratio Deviation Min                                             | 0 to 65535 counts                                       | 1 count / bit                                                |

Footnotes are explained on the last pages of this document.

22 of 34

GMLAN rev4

**Fig. 22: Mode \$06 Data Definitions - Monitor ID 81 (22 Of 28)**  
Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)               | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                         | Range For Information ONLY. Source information is J1979 | Resolution For Information ONLY. Source information is J1979 |
|---------------------------------------|--------------------|------------------------------|---------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| 81                                    | E1                 | 83 <sup>(14)</sup>           | A/F Ratio Deviation Min                                             | -327.68 to +327.67                                      | 0.01 / bit hex to decimal                                    |
| 81                                    | F0 <sup>(16)</sup> | FB                           | Fuel Rail Pressure Positive Deviation                               | -327680 to +327670 kPa                                  | 10 kPa / bit                                                 |
| 81                                    | F1 <sup>(16)</sup> | FB                           | Fuel Rail Pressure Negative Deviation                               | -327680 to +327670 kPa                                  | 10 kPa / bit                                                 |
| 81                                    | F2 <sup>(16)</sup> | 24                           | Fuel Pressure Regulator 1 Exceeded Control Limits Pressure Too Low  | 0 to 65535 counts                                       | 1 count / bit                                                |
| 81                                    | F3 <sup>(16)</sup> | 24                           | Fuel Pressure Regulator 1 Exceeded Control Limits Pressure Too High | 0 to 65535 counts                                       | 1 count / bit                                                |
| 81                                    | F4 <sup>(16)</sup> | 24                           | Fuel Pressure Regulator 2 Exceeded Control Limits Pressure Too Low  | 0 to 65535 counts                                       | 1 count / bit                                                |
| 81                                    | F5 <sup>(16)</sup> | 24                           | Fuel Pressure Regulator 2 Exceeded Control Limits Pressure Too High | 0 to 65535 counts                                       | 1 count / bit                                                |
| 82                                    | B1 <sup>(16)</sup> | 84                           | Air Fuel Imbalance Monitor Variance Ratio EWMA-Normal Mode Bank 2   | -32.768 to +32.767 unitless                             | 0.001 / bit                                                  |
| 82                                    | B2 <sup>(16)</sup> | 84                           | Air Fuel Imbalance Monitor Variance Ratio EWMA-Optional Mode Bank 2 | -32.768 to +32.767 unitless                             | 0.001 / bit                                                  |
| Boost Pressure Control Monitor Bank 1 |                    |                              |                                                                     |                                                         |                                                              |
| 85                                    | B0                 | 30                           | Turbocharger Vane Position Slow Response - Increasing Position      | 0 to 100%                                               | 0.001526% / bit                                              |
| 85                                    | B1                 | 30                           | Turbocharger Vane Position Slow Response - Decreasing Position      | 0 to 100%                                               | 0.001526% / bit                                              |
| 85                                    | B2                 | 05 <sup>(15)</sup>           | Charge Air Cooler Efficiency                                        | 0 to 1.999969 unitless                                  | 0.0000305 / bit                                              |
| 85                                    | B2                 | 06 <sup>(14)</sup>           | Charge Air Cooler Efficiency                                        | 0 to 19.988 unitless                                    | 0.000305 / bit                                               |
| 85                                    | B3 <sup>(16)</sup> | 24                           | Monitoring for Underboost                                           | 0 to 65535 counts                                       | 1 count / bit                                                |
| 85                                    | B3                 | FC                           | Monitoring for Underboost                                           | -327.68 to +327.67 kPa                                  | 0.01 kPa / bit                                               |
| 85                                    | B4 <sup>(16)</sup> | 24                           | Monitoring for Overboost                                            | 0 to 65535 counts                                       | 1 count / bit                                                |
| 85                                    | B4                 | FC                           | Monitoring for Overboost                                            | -327.68 to +327.67 kPa                                  | 0.01 kPa / bit                                               |
| 85                                    | B5                 | AF                           | Turbocharger Vane Position Performance - Low Position               | -327.68 to +327.67%                                     | 0.01% / bit                                                  |
| 85                                    | B6                 | AF                           | Turbocharger Vane Position Performance - High Position              | -327.68 to +327.67%                                     | 0.01% / bit                                                  |
| 85                                    | B7                 | 17                           | Boost Pressure Slow Response - Increasing                           | 0 to 655.35 kPa                                         | 0.01 kPa / bit                                               |
| 85                                    | B8                 | 17                           | Boost Pressure Slow Response - Decreasing                           | 0 to 655.35 kPa                                         | 0.01 kPa / bit                                               |
| 85                                    | B9 <sup>(16)</sup> | 24                           | Monitoring for Excessive Boost                                      | 0 to 65535 counts                                       | 1 count / bit                                                |
| 90                                    | B0 <sup>(16)</sup> | 39                           | Nox Trap Efficiency Below Threshold Bank 1                          | -327.68 to +327.67%                                     | 0.01% / bit                                                  |
| NOx Catalyst Monitor Bank 1           |                    |                              |                                                                     |                                                         |                                                              |
| 98                                    | 90                 | 84                           | SCR NOx Efficiency                                                  | -32.768 to +32.767 unitless                             | 0.001 / bit                                                  |
| 98                                    | 90                 | 84                           | Nox/SCR Catalyst Monitor Bank1 <sup>(16)</sup>                      | -32.768 to +32.767 unitless                             | 0.001 / bit                                                  |

Footnotes are explained on the last pages of this document.

23 of 34

GMLAN rev4

**Fig. 23: Mode \$06 Data Definitions - Monitor ID 81-98 (23 Of 28)**  
Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                                                                                                                                                                                  | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-------------------------|--------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 98                      | 91                 | 84                           | Diesel Emission Fluid Quality                                                                                                                                                                                                                | -32.768 to +32.767 unitless                            | 0.001 / bit                                                 |
| 98                      | 92                 | 03                           | Closed loop Reductant Injection Control at Limit-Flow too low                                                                                                                                                                                | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| 98                      | 93                 | 03                           | Closed Loop Reductant Injection Control at Limit-Flow too High                                                                                                                                                                               | 0 to 655.35 unitless                                   | 0.01 / bit                                                  |
| 98                      | 94                 | 17                           | Reductant Delivery Performance Monitoring                                                                                                                                                                                                    | 0 to 655.35 kPa                                        | 0.01 kPa / bit                                              |
| 98                      | 94 <sup>(16)</sup> | 2F                           | Reductant Delivery Performance Monitoring                                                                                                                                                                                                    | 0 to 655.35%                                           | 0.01% / bit                                                 |
| 98                      | 94 <sup>(16)</sup> | FC                           | Reductant Delivery Performance Monitoring                                                                                                                                                                                                    | -327.68 to +327.67 kPa                                 | 0.01 kPa / bit                                              |
| Misfire Cylinder 1 Data |                    |                              |                                                                                                                                                                                                                                              |                                                        |                                                             |
| A2                      | 0B                 | 24 <sup>(4)</sup>            | EWMA (Exponential Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| A2                      | 0C                 | 24                           | Misfire counts for the last / current driving cycles                                                                                                                                                                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| A2                      | 0B                 | 24 <sup>(13)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts since the last restart after hybrid/electric autostop for the last 10 driving cycles                                                                                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| A2                      | 0C                 | 24 <sup>(13)</sup>           | Misfire counts since the last restart after hybrid/electric autostart                                                                                                                                                                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| Misfire Cylinder 2 Data |                    |                              |                                                                                                                                                                                                                                              |                                                        |                                                             |
| A3                      | 0B                 | 24 <sup>(4) (7)</sup>        | EWMA (Exponential Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| A3                      | 0B                 | 24 <sup>(13)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts since the last restart after hybrid/electric autostop for the last 10 driving cycles                                                                                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| A3                      | 0B                 | 24 <sup>(16)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0 <sup>(16)</sup> | 0 to 65535 counts                                      | 1 count / bit                                               |
| A3                      | 0C                 | 24 <sup>(7)</sup>            | Misfire counts for the last / current driving cycles                                                                                                                                                                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| A3                      | 0C                 | 24 <sup>(13)</sup>           | Misfire counts since the last restart after hybrid/electric autostart                                                                                                                                                                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| A3                      | 0C                 | 24 <sup>(16)</sup>           | Misfire counts for last/current driving cycles (calculated) <sup>(16)</sup>                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| Misfire Cylinder 3 Data |                    |                              |                                                                                                                                                                                                                                              |                                                        |                                                             |
| A4                      | 0B                 | 24 <sup>(4) (7)</sup>        | EWMA (Exponential Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| A4                      | 0B                 | 24 <sup>(13)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts since the last restart after hybrid/electric autostop for the last 10 driving cycles                                                                                               | 0 to 65535 counts                                      | 1 count / bit                                               |

Footnotes are explained on the last pages of this document.

24 of 34

GMLAN rev4

**Fig. 24: Mode \$06 Data Definitions - Monitor ID 98-A4 (24 Of 28)**  
Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID) | Units and Scaling ID (UASID) | Description                                                                                                                                                                                                                                  | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-------------------------|---------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| A4                      | 0B            | 24 <sup>(16)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0 <sup>(16)</sup> | 0 to 65535 counts                                      | 1 count / bit                                               |
| A4                      | 0C            | 24 <sup>(7)</sup>            | Misfire counts for the last / current driving cycles                                                                                                                                                                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| A4                      | 0C            | 24 <sup>(13)</sup>           | Misfire counts since the last restart after hybrid/electric autostart                                                                                                                                                                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| A4                      | 0C            | 24 <sup>(16)</sup>           | Misfire counts for last/current driving cycles (calculated) <sup>(16)</sup>                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| Misfire Cylinder 4 Data |               |                              |                                                                                                                                                                                                                                              |                                                        |                                                             |
| A5                      | 0B            | 24 <sup>(4) (7)</sup>        | EWMA (Exponential Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| A5                      | 0B            | 24 <sup>(13)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts since the last restart after hybrid/electric autostop for the last 10 driving cycles                                                                                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| A5                      | 0B            | 24 <sup>(16)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0 <sup>(16)</sup> | 0 to 65535 counts                                      | 1 count / bit                                               |
| A5                      | 0C            | 24 <sup>(7)</sup>            | Misfire counts for the last / current driving cycles                                                                                                                                                                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| A5                      | 0C            | 24 <sup>(13)</sup>           | Misfire counts since the last restart after hybrid/electric autostart                                                                                                                                                                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| A5                      | 0C            | 24 <sup>(16)</sup>           | Misfire counts for last/current driving cycles (calculated) <sup>(16)</sup>                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| A5                      | A5            | 24                           | EWMA (Exponentially Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| Misfire Cylinder 5 Data |               |                              |                                                                                                                                                                                                                                              |                                                        |                                                             |
| A6                      | 0B            | 24 <sup>(4)</sup>            | EWMA (Exponential Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| A6                      | 0B            | 24 <sup>(13)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts since the last restart after hybrid/electric autostop for the last 10 driving cycles                                                                                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| A6                      | 0B            | 24 <sup>(16)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0 <sup>(16)</sup> | 0 to 65535 counts                                      | 1 count / bit                                               |
| A6                      | 0C            | 24                           | Misfire counts for the last / current driving cycles                                                                                                                                                                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| A6                      | 0C            | 24 <sup>(13)</sup>           | Misfire counts since the last restart after hybrid/electric autostart                                                                                                                                                                        | 0 to 65535 counts                                      | 1 count / bit                                               |

Footnotes are explained on the last pages of this document.

25 of 34

GMLAN rev4

**Fig. 25: Mode \$06 Data Definitions - Monitor ID A4-A6 (25 Of 28)**  
Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID) | Units and Scaling ID (UASID) | Description                                                                                                                                                                                                                                  | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-------------------------|---------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| A6                      | 0C            | 24 <sup>(16)</sup>           | Misfire counts for last/current driving cycles (calculated) <sup>(16)</sup>                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| A6                      | A5            | 24                           | EWMA (Exponentially Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| Misfire Cylinder 6 Data |               |                              |                                                                                                                                                                                                                                              |                                                        |                                                             |
| A7                      | 0B            | 24 <sup>(4)</sup>            | EWMA (Exponential Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| A7                      | 0B            | 24 <sup>(13)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts since the last restart after hybrid/electric autostop for the last 10 driving cycles                                                                                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| A7                      | 0B            | 24 <sup>(16)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0 <sup>(16)</sup> | 0 to 65535 counts                                      | 1 count / bit                                               |
| A7                      | 0C            | 24                           | Misfire counts for the last / current driving cycles                                                                                                                                                                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| A7                      | 0C            | 24 <sup>(13)</sup>           | Misfire counts since the last restart after hybrid/electric autostart                                                                                                                                                                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| A7                      | 0C            | 24 <sup>(16)</sup>           | Misfire counts for last/current driving cycles (calculated) <sup>(16)</sup>                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| A7                      | A5            | 24                           | EWMA (Exponentially Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| Misfire Cylinder 7 Data |               |                              |                                                                                                                                                                                                                                              |                                                        |                                                             |
| A8                      | 0B            | 24                           | EWMA (Exponential Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| A8                      | 0B            | 24 <sup>(13)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts since the last restart after hybrid/electric autostop for the last 10 driving cycles                                                                                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| A8                      | 0B            | 24 <sup>(16)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0 <sup>(16)</sup> | 0 to 65535 counts                                      | 1 count / bit                                               |
| A8                      | 0C            | 24                           | Misfire counts for the last / current driving cycles                                                                                                                                                                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| A8                      | 0C            | 24 <sup>(13)</sup>           | Misfire counts since the last restart after hybrid/electric autostart                                                                                                                                                                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| A8                      | 0C            | 24 <sup>(16)</sup>           | Misfire counts for last/current driving cycles (calculated) <sup>(16)</sup>                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| A8                      | A5            | 24                           | EWMA (Exponentially Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                   | 0 to 65535 counts                                      | 1 count / bit                                               |

Footnotes are explained on the last pages of this document.

26 of 34

GMLAN rev4

**Fig. 26: Mode \$06 Data Definitions - Monitor ID A6-A8 (26 Of 28)**

Courtesy of GENERAL MOTORS CORP.

# GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID)                  | Test ID (TID)      | Units and Scaling ID (UASID) | Description                                                                                                                                                                                                                                  | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|------------------------------------------|--------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| Misfire Cylinder 8 Data                  |                    |                              |                                                                                                                                                                                                                                              |                                                        |                                                             |
| A9                                       | 0B                 | 24                           | EWMA (Exponential Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                     | 0 to 65535 counts                                      | 1 count / bit                                               |
| A9                                       | 0B                 | 24 <sup>(13)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts since the last restart after hybrid/electric autostop for the last 10 driving cycles                                                                                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| A9                                       | 0B                 | 24 <sup>(16)</sup>           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0 <sup>(16)</sup> | 0 to 65535 counts                                      | 1 count / bit                                               |
| A9                                       | 0C                 | 24                           | Misfire counts for the last / current driving cycles                                                                                                                                                                                         | 0 to 65535 counts                                      | 1 count / bit                                               |
| A9                                       | 0C                 | 24 <sup>(13)</sup>           | Misfire counts since the last restart after hybrid/electric autostart                                                                                                                                                                        | 0 to 65535 counts                                      | 1 count / bit                                               |
| A9                                       | 0C                 | 24 <sup>(16)</sup>           | Misfire counts for last/current driving cycles (calculated) <sup>(16)</sup>                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| A9                                       | A5                 | 24                           | EWMA (Exponentially Weighted Moving Average) misfire counts for the last 10 driving cycles                                                                                                                                                   | 0 to 65535 counts                                      | 1 count / bit                                               |
| AA                                       | 0B <sup>(16)</sup> | 24                           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0                 | 0 to 65535 counts                                      | 1 count / bit                                               |
| AA                                       | 0C <sup>(16)</sup> | 24                           | Misfire counts for last/current driving cycles (calculated)                                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| AB                                       | 0B <sup>(16)</sup> | 24                           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0                 | 0 to 65535 counts                                      | 1 count / bit                                               |
| AB                                       | 0C <sup>(16)</sup> | 24                           | Misfire counts for last/current driving cycles (calculated)                                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| AC                                       | 0B <sup>(16)</sup> | 24                           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0                 | 0 to 65535 counts                                      | 1 count / bit                                               |
| AC                                       | 0C <sup>(16)</sup> | 24                           | Misfire counts for last/current driving cycles (calculated)                                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| AD                                       | 0B <sup>(16)</sup> | 24                           | EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles (calculated), Calculation: $0.1 * (\text{current counts}) + 0.9 * (\text{previous average})$ , Initial value for (previous average) = 0                 | 0 to 65535 counts                                      | 1 count / bit                                               |
| AD                                       | 0C <sup>(16)</sup> | 24                           | Misfire counts for last/current driving cycles (calculated)                                                                                                                                                                                  | 0 to 65535 counts                                      | 1 count / bit                                               |
| Particulate Matter Filter Monitor Bank 1 |                    |                              |                                                                                                                                                                                                                                              |                                                        |                                                             |

Footnotes are explained on the last pages of this document.

27 of 34

GMLAN rev4

**Fig. 27: Mode \$06 Data Definitions - Monitor ID A9-AD (27 Of 28)**

Courtesy of GENERAL MOTORS CORP.

## GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

| OBD Monitor ID (OBDMID) | Test ID (TID)     | Units and Scaling ID (UASID) | Description                                                                                | Range For Information ONLY Source information is J1979 | Resolution For Information ONLY Source information is J1979 |
|-------------------------|-------------------|------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| B2                      | E0                | 24                           | Post Injection Control Under Temperature Deviation Monitoring                              | 0 to 65535 counts                                      | 1 count / bit                                               |
| B2                      | E1                | 24                           | Post Injection Control Over Temperature Deviation Monitoring                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| B2                      | E2                | 24                           | HCI Injection Control Under Temperature Deviation Monitoring                               | 0 to 65535 counts                                      | 1 count / bit                                               |
| B2                      | E3                | 24                           | HCI Injection Control Over Temperature Deviation Monitoring                                | 0 to 65535 counts                                      | 1 count / bit                                               |
| B2                      | E4                | 24                           | After Injection Control Under Temperature Deviation Monitoring                             | 0 to 65535 counts                                      | 1 count / bit                                               |
| B2                      | E5                | 24                           | After Injection Control Over Temperature Deviation Monitoring                              | 0 to 65535 counts                                      | 1 count / bit                                               |
| B2                      | F0 <sup>(6)</sup> | 04                           | Diesel Particulate Filter Efficiency Bank 1                                                | 0 to 65.535 unitless                                   | 0.001 / bit                                                 |
| B2                      | F0                | 17                           | Diesel Particulate Filter Efficiency                                                       | 0 to 655.35 kPa                                        | 0.01 kPa / bit                                              |
| B2                      | F0                | 17                           | Diesel Particulate Filter Efficiency Bank 1 <sup>(6)</sup>                                 | 0 to 655.35 kPa                                        | 0.01 kPa / bit                                              |
| B2                      | F1                | 20 <sup>(15)</sup>           | Diesel Particulate Filter Regeneration Frequency Bank 1                                    | 0 to 255.993                                           | 0.00390625 / bit                                            |
| B2                      | F1                | 36 <sup>(14)</sup>           | Diesel Particulate Filter Regeneration Frequency Bank 1                                    | 0 to 655.35 g                                          | 0.01 g / bit                                                |
| B2                      | F2                | 96                           | Closed Loop Exhaust Fuel Injector DPF Regeneration Control At Limit - Temperature Too Low  | -3276.8 to +3276.7°C                                   | 0.1°C / bit                                                 |
| B2                      | F3                | 96                           | Closed Loop Exhaust Fuel Injector DPF Regeneration Control At Limit - Temperature Too High | -3276.8 to +3276.7°C                                   | 0.1°C / bit                                                 |
| B2                      | F4                | 96                           | Closed Loop DPF Regeneration Control At Limit - Stage 1 Temperature Too Low                | -3276.8 to +3276.7°C                                   | 0.1°C / bit                                                 |
| B2                      | F5                | 96                           | Closed Loop DPF Regeneration Control At Limit - Stage 1 Temperature Too High               | -3276.8 to +3276.7°C                                   | 0.1°C / bit                                                 |
| B2                      | F6 <sup>(6)</sup> | 06                           | Diesel Particulate Filter Efficiency Monitoring                                            | 0 to 19.988175 counts                                  | 0.000305 count / bit                                        |
| B2                      | F6                | 83                           | Diesel Particulate Filter Efficiency Monitoring                                            | -327.68 to +327.67                                     | 0.01 / bit hex to decimal signed                            |
| B2                      | F7                | 24                           | Diesel Particulate Filter Total Not Functional Failure Monitoring                          | 0 to 65535 counts                                      | 1 count / bit                                               |
| B2                      | F8 <sup>(6)</sup> | 17                           | Diesel Particulate Filter (DPF) High Differential Pressure                                 | 0 to 655.35 kPa                                        | 0.01 kPa / bit                                              |

Footnotes are explained on the last pages of this document.

28 of 34

GMLAN rev4

**Fig. 28: Mode \$06 Data Definitions - Monitor ID B2 (28 Of 28)**  
Courtesy of GENERAL MOTORS CORP.

## GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

### FOOTNOTES

- 1 For the following 2004 model year vehicles:

Cadillac XLR, SRX with 4.6 liter (VIN A) engine

The following OBDMIDs and TIDs may be defined as shown:

OBDMID \$01  
TID \$10 may be replaced with TID \$89

OBDMID \$05  
TID \$10 may be replaced with TID \$89

OBDMID \$39  
TID \$39 may be replaced with TID \$B0  
TID \$3A may be replaced with TID \$B1

- 2 For the following 2004 model year vehicles:

Cadillac XLR, SRX with 4.6 liter (VIN A) engine

OBDMID \$39 TID \$3B: Test is not supported by the vehicle. Test limits and value are invalid.

- 3 For the following 2005 model year vehicles:

Chevrolet Equinox with 3.4 liter (VIN F)

Chevrolet Malibu with 3.5 liter (VIN 8)

Pontiac Grand Am with 3.5 liter (VIN 8)

OBDMID \$01 TID \$88 test limits and value should be divided by 1000.

Footnotes are explained on the last pages of this document.

29 of 34

GMLAN rev4

**Fig. 29: GMLAN Footnotes 1, 2 & 3**  
Courtesy of GENERAL MOTORS CORP.

## GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

### FOOTNOTES

4 For the following 2005 model year vehicles:

|                                          |
|------------------------------------------|
| Chevrolet Equinox with 3.4 liter (VIN F) |
| Chevrolet Malibu with 3.5 liter (VIN 8)  |
| Pontiac Grand Am with 3.5 liter (VIN 8)  |

OBDMID \$A2 through \$A7 TID \$0B test value should be multiplied by 10.

5 For the following 2007 model year vehicle:

|                                        |
|----------------------------------------|
| Buick Lucerne with 3.8L (VIN 2) engine |
|----------------------------------------|

If the test limit for OBDMID \$3D TID \$6C reads 8.8 seconds (raw Hex value 58), the test value may be invalid.

If the test value is more than the test limit *-and-* P0446 is not set, the data is invalid.

If the test value is less than the test limit *-and-* P0446 is set, the data may be invalid.

6 For the following 2006 model year vehicles:

|                                                     |
|-----------------------------------------------------|
| Buick Lucerne with 4.6L (VIN Y) engine              |
| Cadillac DTS with 4.6L (VIN Y <i>-or-</i> 9) engine |

OBDMID \$31 TID \$A9 test limits and test value should be multiplied by 4 (limit result to -32.768 -to- +32.767 kPa).

Footnotes are explained on the last pages of this document.

30 of 34

GMLAN rev4

**Fig. 30: GMLAN Footnotes 4, 5 & 6**  
Courtesy of GENERAL MOTORS CORP.

## GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

### FOOTNOTES

7 For the following 2007 model year vehicle:

|                                                         |
|---------------------------------------------------------|
| Pontiac Solstice, Saturn Sky, with 2.0L (VIN X) engine. |
|---------------------------------------------------------|

The OBDMID \$A3, \$A4, and \$A5 are misaligned with the cylinders.

OBDMID \$A3 Test IDs contain misfire data for cylinder #3, (not #2).

OBDMID \$A4 Test IDs contain misfire data for cylinder #4, (not #3).

OBDMID \$A5 Test IDs contain misfire data for cylinder #2, (not #4).

8 For the following 2010 model vehicles:

|                                                          |
|----------------------------------------------------------|
| Pontiac Solstice and Saturn Sky with 2.0L (VIN X) engine |
| Chevrolet HHR SS and Cobalt SS with 2.0L (VIN X) engine  |
| Cadillac CTS and STS 3.6L (VIN X) engine                 |
| Saturn Outlook 3.6L (VIN X) engine                       |
| Buick Enclave and LaCrosse 3.6L (VIN X) engine           |
| GMC Acadia 3.6L (VIN X) engine                           |
| Chevrolet Traverse and Camaro 3.6L (VIN X) engine        |
| Pontiac G8 with 3.6L (VIN X) engine                      |

For the following OBDMID and TID the test value could equal the test limit when the test has failed.

|             |          |
|-------------|----------|
| OBDMID \$35 | TID \$9D |
| OBDMID \$35 | TID \$9A |
| OBDMID \$35 | TID \$9E |
| OBDMID \$35 | TID \$9B |
| OBDMID \$42 | TID \$81 |
| OBDMID \$21 | TID \$84 |
| OBDMID \$02 | TID \$81 |
| OBDMID \$02 | TID \$82 |

Footnotes are explained on the last pages of this document.

31 of 34

GMLAN rev4

**Fig. 31: GMLAN Footnotes 7 & 8**  
Courtesy of GENERAL MOTORS CORP.

## GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

### FOOTNOTES

9 For the following 2010 model vehicles:

|                                                   |
|---------------------------------------------------|
| Cadillac CTS and STS 3.6L (VIN X) engine          |
| Saturn Outlook 3.6L (VIN X) engine                |
| Buick Enclave and LaCrosse 3.6L (VIN X) engine    |
| GMC Acadia 3.6L (VIN X) engine                    |
| Chevrolet Traverse and Camaro 3.6L (VIN X) engine |
| Pontiac G8 with 3.6L (VIN X) engine               |

For the following OBDMID and TID the test value could equal the test limit when the test has failed.

|             |          |
|-------------|----------|
| OBDMID \$36 | TID \$9D |
| OBDMID \$36 | TID \$9A |
| OBDMID \$36 | TID \$9E |
| OBDMID \$36 | TID \$9B |
| OBDMID \$41 | TID \$81 |
| OBDMID \$45 | TID \$81 |
| OBDMID \$46 | TID \$81 |
| OBDMID \$22 | TID \$84 |
| OBDMID \$06 | TID \$81 |

10 For the following 2011 model year vehicle:

Chevrolet Cruze with 1.8L (VIN H ) engine

OBDMID \$01 TID \$80 and TID \$81 test values and limits may not be available on all vehicles.

Footnotes are explained on the last pages of this document.

32 of 34

GMLAN rev4

### Fig. 32: GMLAN Footnotes 9 & 10

Courtesy of GENERAL MOTORS CORP.

## GM mode \$06 data definitions for GM vehicles using GMLAN diagnostic data link

Some items have footnotes, defined on the last pages.

### FOOTNOTES

11 For the following 2011 model year vehicle:

Chevrolet Cruze with 1.8L (VIN H ) engine

OBDMID \$01 TID \$91 and TID \$92: Tests are not supported by the vehicle. Test limits and values are invalid.

12 For the following vehicles:

All vehicles that respond with OBDMID \$3A TID \$C0 UASID \$31

Test value could equal the test limit when the test has failed.

13 For the following vehicles:

All hybrid/electric vehicles through 2013 model year

Footnotes are explained on the last pages of this document.

33 of 34

GMLAN rev4

### Fig. 33: GMLAN Footnotes 11, 12 & 13

Courtesy of GENERAL MOTORS CORP.

## FOOTNOTES

14 For the following vehicles:

All 2016 and prior model year vehicles except 2016 Chevrolet Colorado and GMC Canyon with 2.5L (VIN L / RPO-LKH ) or 2.8L (VIN 1 / RPO-LWN) Diesel engine

15 For the following vehicles:

All 2016 model year Chevrolet Colorado and GMC Canyon with 2.5L (VIN L / RPO-LKH ) or 2.8L (VIN 1 / RPO-LWN ) Diesel engine

16 For the following vehicles:

All 2017 model year

Footnotes are explained on the last pages of this document.

34 of 34

GMLAN rev4

**Fig. 34: GMLAN Footnotes 14, 15 & 16**  
**Courtesy of GENERAL MOTORS CORP.**