

Truck Manufacturer: **DETROIT DIESEL**



Major Products with ECMs:

- [Series 60](#): Detroit Diesel's Series 60 -- start of production in 1987. Detroit Diesel claims that the Series 60 was the first fully integrated heavy-duty diesel engine with electronic controls in the world.
- [MBE 4000](#): Manufactured specifically for North American market, the Mercedes Benz 4000 series engine (MBE 4000) is claimed to be stronger and lighter than any engine in its class.
- [MBE 900](#): In 1998, Detroit Diesel entered the NAFTA medium-duty truck market with the Mercedes Benz 900 engine (MBE 900). The MBE 900 is used in many different medium-duty truck applications including food service, beverage, general delivery, refuse, and towing.

ECM Versions

- DDEC I— Typically found in truck engines manufactured in **1987** -- ECM in cab, no data pages
- DDEC II-- Typically found in Truck engines trucks manufactured in **1998** – no data pages
- DDEC III--Typically found in truck engines manufactured from **1993 - 1997** no hard brake info
- DDEC IV--Typically found in truck engines manufactured from **1997 – 2004**
- DDEC V-- Typically found in truck engines from **2004-2006**
- DDEC VI-- Newest production **2007** -

Features and Concerns

1. ECMs may be updated in older trucks.
2. No incident reports are available in a DDEC III unless a Pro-Driver installed. There is calibration data only in a DDEC III (if enabled) which won't be overwritten. Pro-Driver data may be overwritten but contains up to 5 hard brake incidences. The oldest report will be overwritten first.
3. DDEC IV ECMs produced in October, November, and December 1997 had the clock date set incorrectly. The date is 8 months slow in ECMs built in October and November and 4 months slow in ECMs built in December.
4. DDEC IV and newer ECMs may contain 3 diagnostic records, 2 hard brake records and one last stop record (defaulted to record but can be set not to record if desired; threshold rate defaulted at 7 mph/sec).
5. Hard brake reports shown in 44 sec pre-threshold, 15 post-threshold, and 1sec increments.
6. Reported data includes vehicle speed (calculated using wheel rotation), braking, clutch position, rpm, cruise control, diagnostics, daily/ monthly use charts, etc..
7. The oldest record will be overwritten first. Last stop records will be overwritten from the moment the vehicle is driven from accident (engine on and vehicle traveling at a speed greater than about 3 mph).
8. Oldest hard brake may be overwritten if new event occurs after accident while the truck is under its own power.
9. Fault codes may be lost if ECM is removed from vehicle and read off vehicle without simulating all the sensors. New fault codes may be introduced if a download is conducted on a damaged truck.
10. An audit trail of who's been in the system will be shown.
11. Time stamp on all reports relates to ECM clock which drifts up to +/- 3 hours per year.
12. Bench downloading may create false Fault codes. Last stop and hard brake records should remain unaltered.

Truck Manufacturer: CATERPILLAR



Major Products with ECMs:

- **C-7, C-9, C-11, C-13, C-15** - **2004** and later Electronic engine lines for on-highway use in trucks, RV's, School busses, and Motor coaches
- **C-10, C-12, C-15, C-16, 3126E** - **1990-2004**
- 3176B, 3406E - **1993**
- 3406B PEEC – 3406C: pre **1990** Mechanical engine – (no electronic controls)

ECM Versions

- ADEM -- 1990 Dual 8-bit processors@2MHz, 64k flash memory, 8k RAM
- ADEM 2 --1992 Dual 8-bit processors@4MHz, 256k flash memory, 32k RAM
- ADEM 3 -- 1996 32-bit processors + 8 bit processor @24MHz, 1M flash memory, 256k RAM
- ADEM 4 -- 2004 32 bit RISC processor @56MHz+ FPGA, 2M flash memory, 512k RAM

Features and Concerns

1. The date, time of record, and snapshot will be logged if the “Quick Stop” rate is set to something other than zero and the threshold is met. The “Quick Stop” feature became available in Nov 1995.
2. Factory defaults are not preset to record “Quick Stop” data; however, if a fault code is met (such as due to low oil pressure), then a record will be written in Snapshots
3. If enabled, the last 3 records will be available. 44 sec pre threshold, 15 sec post threshold, one sec increments.
4. If a snapshot record is written due to a critical fault, it will be 9.12 sec pre-threshold, 3.36 sec post-threshold, 0.48 sec increments
5. Reported data includes vehicle speed (calculated using wheel rotation), braking, clutch position, rpm, cruise control, diagnostic, etc.
6. An audit trail of who's been in the system will be shown.
7. Bench downloading without attaching working sensors will create new Snapshots, overwriting other Snapshots that exist on the ECM which may have contained useful information.
8. Fault codes may be lost if ECM is removed from vehicle and read off vehicle without simulating all the sensors. New fault codes may be introduced if a download is conducted on a damaged truck.
9. Battery life: over 5 years

Truck Manufacturer: CUMMINS, Inc.



Major Products with ECMs:

- **ISX and ISM** - late 1990's – **today** Electronic engine lines for on-highway use in class 8 trucks
- **ISB, ISC, ISL** - 1990's to **today** medium duty
- **N14 Celect, M11 Celec plus** - 1990's class 8 trucks

ECM Versions

- | | |
|--|---|
| ▪ ISX - CM871 | ▪ QSB4.5, QSB5.9, and QSB6.7 - CM850 |
| ▪ ISM - CM871 | ▪ ISB, ISC, and ISL - CM2150D |
| ▪ ISC, QSC8.3 - CM850 and CM2150D | ▪ ISDe, ISLe - CM2150C |
| ▪ QSM11 - CM876 | ▪ ISZ - CM2150D |
| ▪ QSB, QSC, and QSL - CM850 | ▪ QSB3.3 - CM2150C/D |
| ▪ QSK19, 23, 38, 50, 60, and 78 - CM850 | ▪ ISBe 2/3-CM850 |
| | ▪ ISL G-CM2180A |

Features and Concerns

1. 2005 was the first year that some ECM's contained panic stop information. Vehicles older than 2005 must have a Road Relay installed in order to have panic stop information. Road Relay dash mounted display has been an option available since 1993.
2. Not all 2005 models have panic stop information in the ECM.
3. Road Relay IV retains last 3 "Panic Stops," has speed, and brake information.
4. Factory default threshold is 9 mph/sec on a Road Relay IV.
5. A "Panic Stop" report records 59 sec pre-threshold, 15 seconds post-threshold, 1 sec increments.
6. Fault codes may be lost if ECM is removed from vehicle and read off vehicle without simulating all the sensors. New fault codes may be introduced if a download is conducted on a damaged truck.
7. Snapshot at first occurrence of a fault code including vehicle speed.
8. No time stamp unless vehicle equipped with Road Relay.

Truck Manufacturer:

MACK Trucks, Inc

(a subsidiary of AB Volvo)



Major Products with ECMs:

- MP 7, MP 8 - 2007 integrated engines that meet the new EPA standards. Covers all highway and vocational applications. MP8 has highest horsepower and lowest emissions ever offered by Mack.
- ASET Engine – 2002/2003 engine with EGR (uses ECM version VMAC IV)
- E 7 – Pre 2000 no useful data in these engines

ECM Versions

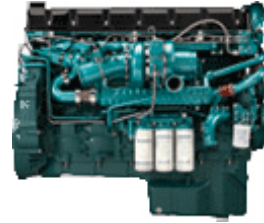
(Mack uses two ECMs in their units. Once is mounted on the engine and the other is mounted on the chassis: VECU, EECU.)

- VMAC III – Has incident data beginning with STEP 10 software.
- VMAC IV - Started about model year 1999-2000

Features and Concerns

1. Incident data must be downloaded by a Mack representative.
2. Two latest Incident Reports if threshold is met.
3. Default threshold is 10 mph/sec.
4. Loss of oil pressure will create a fault that contains speed, rpm, brake, clutch, etc.
5. Fault data, calibration data, user data.
6. Vehicle speed, Engine Speed, Pedal Position, Dash Switch Positions, etc.
7. User may program sampling rate. Limit is 80 samples prior to and 80 samples after the trigger point.
8. Sampling rate from 0.1 sec to 1.0 sec. Default set is 0.2 sec which will record 16 sc prior to the incident and 16 sec after threshold is met.
9. Up to six parameters can be recorded in an incident report.
10. Information will be reset upon download unless sent to Mack Trucks, Inc. (New software may be out that the general public can buy that will not overwrite data.)
11. Fault codes may be lost if ECM is removed from vehicle and read off vehicle without simulating all the sensors. New fault codes may be introduced if a download is conducted on a damaged truck.

Truck Manufacturer: Volvo Trucks North America, Inc.
Volvo Trucks Canada, Ltd.



Major Products with ECMs:

- D-16 (for truck models: VN 780, 730,...) and (VT 880, 830, 800) - 2005-2007 heavy-haul applications
- D-13 - 2007 Primary applications are LTL, truckload, line haul freight and vocational duties.
- D-11 - 2007 light duty application

ECU Versions

MID 128

Features and Concerns

1. Incident data must be downloaded by a Mack representative.
2. Two latest Incident Reports if threshold is met.
3. Default threshold is 10 mph/sec.
4. Loss of oil pressure will create a fault that contains speed, rpm, brake, clutch, etc.
5. Fault data, calibration data, user data.
6. Vehicle speed, Engine Speed, Pedal Position, Dash Switch Positions, etc.
7. User may program sampling rate. Limit is 80 samples prior to and 80 samples after the trigger point.
8. Sampling rate from 0.1 sec to 1.0 sec. Default set is 0.2 sec which will record 16 sec prior to the incident and 16 sec after threshold is met.
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