Delphi MT92/C Engine Control Module

The Delphi MT92/C Engine Control Module (ECM) is an engine controller for gasoline direct injection (GDi) applications. It assists the control of a vehicle’s engine management system by instantaneously measuring multiple events enabling “real time” adjustments of fuel, air and spark to help the engine operate efficiently, reliably and economically.

The Delphi MT92/C ECM offers manufacturers flexible, full-function engine control, especially for programs that must meet stringent emissions and On Board Diagnostics (OBD) standards, including:
- US PZEV, SULEV, LEV2
- Korean KULEV
- Euro 3, Euro 4, Euro 5 and Euro 6
- European On Board Diagnostics (EOBD)
- U.S. OBD-I and II

The Delphi MT92/C ECM features an up-integrated design that reduces weight and wiring. The robust design and compact dimensions of the module enable both under-hood and passenger compartment mounting options. Flash programming allows in-vehicle memory updates.

Benefits

- Two available variants (MT92/C and MT92) to meet different customer requirements. High featured, low cost controllers with 32-bit microprocessor offering up to 2 MB flash memory that enables high-speed processing and in-vehicle memory updates.
- High performance hardware, efficient software, advanced function control and compliance with new emissions and diagnostics standards combine for an optimal engine management system. Flexible software allows configuration to meet unique customer requirements.
- Controllers use Delphi up-integrated, application specific integrated circuits (ASIC) that support high technology features (e.g., changing injector profile instantaneously to optimize performance in dynamic situations) and help reduce size, weight and cost.
- High pressure fuel pump control support to meet high pressure requirements of GDi applications.
- Small package size uses a standard FR4 circuit board enabling mounting flexibility and manufacturing flexibility.
- 154-way (90 + 64) dual cavities connection system offers harness outing flexibility, with separate engine and chassis connectors.
- Electronic fuel control enables 3- and 4-cylinder sequential fuel injection applications.
- Electronic spark control enables 3- and 4-cylinder sequential spark applications, with or without high current coil drivers in the ECM, or waste spark ignition.
- Digital signal processing (DSP) provides knock control.
- On-board boost power supply with 65 V or 50 V and customized integrated circuit for high voltage injector control eliminates the need for a stand-alone injector driver.
- Up to four split injection capability per cycle based on engine speed to support excellent engine performance.
- Injector closed loop fuel control (ICFC) technology aids system stability.
- Linear wide range air fuel sensor enables manufacturer to meeting stringent emissions requirements.
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- Advanced valve train functions include:
  - Dual Variable Valve Timing (DVVT)
  - 2-Step Variable Valve Lift (VVT)
  - Continuous Variable Valve Lift (CVVL)
- Advanced turbocharge functions include:
  - Conventional Wastegate Control (AWG)
  - Variable Geometry Turbocharger (VGT)
  - Electrical Turbocharge (e-Turbo)
  - Integrated Barometer
- Other conventional and advanced functions include:
  - Electronic Throttle Control (ETC)
  - Variable Geometric Intake Solenoid (VGIS)
  - Charcoal Canister Purge Control (CCP)
  - Individual Cylinder Fuel Close Loop Control (ICFC)
  - Smart Generator Control
  - Cruise Control
  - Start/Stop Function
  - Dual Injector System
  - Integrated Fuel Pump Motor Drive
- Serial communication flexibility with Controller Area Network (CAN), GMLAN, or Local Interconnect Network (LIN).
- Model-based algorithm design.
- Pb-Free (RoHS) design to meet manufacturer requirements.
- Compliant to IP6K9K international sealing standards, which enables mounting even in a harsh under-hood environment.

 Typical Applications

The Delphi MT92/C Engine Control Module is designed to support most 3- and 4-cylinder gasoline direct injection engine programs and turbocharged engine programs.

 Availability

The Delphi MT92/C Engine Control Module is in production. Samples are available to automotive manufacturer customers. Contact Delphi for further information.

 Performance Advantages

The Delphi MT92/C Engine Control Module offers features that can help vehicle manufacturers meet demanding engine performance targets, high-level fuel economy requirements, and stringent emissions regulations. It helps the engine management system increase fuel economy and reduce emissions, contribute to smooth vehicle acceleration, enable enhanced cold weather start-ups and help extend engine life.

Delphi’s unique understanding of the complete engine management system and its full range of major component development capabilities contribute to superior component design and cost-effective systems.
The Delphi Advantage

Delphi offers the benefits of more than 30 years’ experience in high volume engine control module design and manufacturing. Delphi can provide customers with customized IC design, manufacturing and analysis. Delphi can also provide an engine control module or a complete system with software, algorithms, calibration and other components.

As a global leader in engine management systems technology, Delphi can help manufacturers around the world meet emissions requirements, improve fuel economy and enhance performance. Delphi is a source for high value solutions and our systems experience is built into every product. Delphi’s flexible engineering approach encourages collaboration. And, Delphi has a thorough understanding of automotive markets around the world and a global network of resources.