Engine Control Unit

The Engine Control Unit (ECU) is part of Visteon’s Engine Management System (EMS) for motorcycles designed specifically to provide value-priced Electronic Fuel Injection to 1-cylinder and 2-cylinder engine growth market customers. The system hardware and software meets growth market emissions regulations with solutions ranging from a basic Open Loop system to a Closed Loop system with full sensor heater control and feedback.

The compact ECU with integrated sensors can be located onto the throttle body which reduces wiring harness complexity and cost. A remote mount stand-alone version (without integrated sensors) is also available.

Benefits

- Meets growth market emissions legislations through the use of innovative software algorithms combined with proven cost-effective hardware design.
- Able to package on the smallest size engines due to small component footprint.
- Environmentally rugged.
- Reduced weight and manufacturing / assembly costs through innovative material selection and assembly design.
- Reduced wiring harness complexity and cost when ECU with integrated sensors is located onto throttle body.

Status

☐ Production
☒ Application Ready
☐ Advanced Development
Features

• Connector
  – 24-pin sealed automotive-grade connector system (USCAR-2)
  – 0.64 mm (square) GET terminal system; 5A continuous rating
  – Mates with Tyco wiring harness connector -638849- Key “A”
  – Integral plastic (30 GF PBT) housing

• Integrated Sensors
  – Manifold Absolute Pressure (MAP) and Intake Air Temperature (IAT)
  – Sensors mounted through throttle housing
  – Mechanically compliant, gas-tight, and chemically resistant seals

• Remote Sensors and Actuators
  – Cylinder Head Temperature (CHT)
  – Crank Position Sensor (CPS)
  – Throttle Position Sensor (TPS)
  – Heated Exhaust Gas Oxygen (HEGO)
  – Tip-over Switch (TOS)
  – Two Fuel Injector Drivers
  – Fuel Pump Relay
  – Malfunction Indicator Light (MIL) Driver
  – Two Ignition Coil Drivers
  – Stepper Motor IAC

• Communications
  – Production: K-Line capability for J1 programming and fault code retrieval
  – Development: CAN communication via J3 connector

• Environmental Capability
  – Meets IP67 per IEC 60529 (as installed on throttle body in sealed system)
    • Dust-tight
    • High-pressure water spray resistant
    • Submersible
  – Resistant to engine compartment fluids
  – Designed to withstand peak vibration of 20 ‘G’ RMS
  – Operating Temperature: -20 °C to 100 °C
  – Storage Temperature: -20 °C to 110 °C
  – Operating Altitude: -305 m to 4572 m

• Operating Voltage
  – 7 V to 18 V DC
  – Load dump and over-voltage protection
  – Reverse battery protection via external EMS power relay
  – Boost Battery Start: 24 V maximum for 60 seconds

• EMC
  – Compatible to GB14023-2000

• Vehicle Applications
  – 1-cylinder and 2-cylinder engine in motorcycles / scooters