

New Euro-4 ECU

Euro-4 is the latest generation engine management system from EFI Technology. It is one of the smallest and yet one of the most powerful ECU's developed by EFI Technology for use on engines with up to 8 cylinders. It is suitable for use on both road car and racing engines.

It features two independent knock detection and knock control channels.

A NTK UEGO wide band lambda sensor can be connected directly to the ECU for use with its unique self mapping of the fuel injection and closed loop fuel control. A second sensor can be connected via EFI's external module, allowing bank-to-bank control on V engines. Euro-4 has a built-in H-bridge driver for use with drive-by-wire throttle control.

Data can be recorded by the on-board logger and data can be exchanged with external modules via 2 independent CAN lines.

System Overview

- 40 MHz PPC microprocessor
- 4 cylinders in full sequential mode
- 6 and 8 cylinders in sequential injection and wasted spark mode
- On-board data logging
- Automatic fuel control
- Closed loop lambda control
- Automatic boost control
- Variable camshaft timing
- Idle speed control
- Drive-by-Wire control
- 2 selectable engine maps

General

- Very small and flat aluminium cast housing
- 2 automotive main connectors with high pin density
- Dimensions 165 x 95 x 21 mm
- Weight 365 grams

Communication

- 2 x CAN 2.0B interfaces



Inputs

- 4 inductive speed and sync sensor inputs
- 2 Hall effect crank and cam sensor inputs
- 3 spare Hall effect / digital switch inputs
- 2 knock sensor inputs
- 1 direct NTK wide band lambda sensor input
- 21 universal sensor inputs
- 1 built-in barometric air pressure sensor
- 4 Hall effect wheel speed sensors

Outputs

- 8 on-off fuel injector drivers
- 4 inductive ignition coil drivers
- 4 logic ignition coil drivers
- 8 multipurpose switches and PWM's
- 1 lambda sensor heater
- 1 H-bridge drive-by-wire controller
- 4 sensor power supplies

Special Features

- Control strategy for direct fuel injection
- Control strategy for sequential gear change
- Traction control
- 8 Mb logger memory capacity

Conditions for Use

- Temperature range -40...+125 degrees C
- Power supply 7..16 volts

EFI Technology Euro-4 – The Complete Solution

The intention of the Euro 4 ECU is to be an integrated engine management and data logger unit. As such it offers a very comprehensive range of inputs;

Example Configuration

Analogue	Sensor
1	TPS 1
2	Manifold Air Pressure
3	Fuel Pressure
4	Oil Pressure
5	Gear Box Potentiometer
6	Lateral G Sensor
7	Longitudinal G Sensor
8	Front Brake Pressure

Analogue	Sensor
9	Rear Brake Pressure
10	Steering Angle
11	RF Damper
12	LF Damper
13	RR Damper
14	LR Damper
15	Spare
16	Internal Baro Pressure

Temp	Sensor
1	Water Temperature
2	Air Temperature

Temp	Sensor
3	Oil Temperature
4	Gear Oil Temperature

Digital	Sensor
HE 1	LF Wheel Speed
HE 2	RF Wheel Speed
HE 3	LR Wheel Speed
HE 4	RR Wheel Speed
HE 5	Spare
HE 6	Spare

Digital	Sensor
EM 1	Crank Sensor
EM 2	Cam Sensor
EM 3	Inlet Camshaft Timing
EM 4	Exhaust Camshaft Timing

Lambda	Wide Band Lambda Sensor
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The dual functionality of the ECU reduces the complexity of a traditional two system solution. Not only does a single unit offer considerable financial advantages it also avoids the weight incurred by adding a second system and it's wiring.

The CAN line from the ECU can be used to feed information to a dashboard and a lap timing kit incorporated to give lap times. The Euro 4 really does offer a complete single unit solution.