



TLE8080

One Chip Engine Management Power Interface Solution for Small 1 Cylinder Engines

The TLE8080EM is an Engine Management System IC which includes basic functionality to support 1 cylinder combustion engines with focus on the state-of-the-art technology Electronic Fuel Injection (EFI).

The TLE8080EM contains a 5V power supply with current up to 250mA, a K-line transceiver and 5 power stages, a variable reluctance sensor interface and features a SPI for control and diagnosis.

Basic protection and diagnosis features are included: Overtemperature, overcurrent protection, undervoltage reset and open-load in Off.

Applications

4 stroke small combustion engine for:

- Motorcycle, 2- and 3- wheelers and scooters
- Watercraft, marines and jet-ski
- Snow mobiles, lawn-tractors or -mowers
- Small gasoline power generating sets

Key Features

- 5V supply including watch dog and reset
- 2 low-side drivers for fuel injector and valves
- 1 low-side driver for multifunction Indication lamp
- 2 relay drivers
- K-line transceiver
- Variable Reluctance Sensor interface
- SPI control

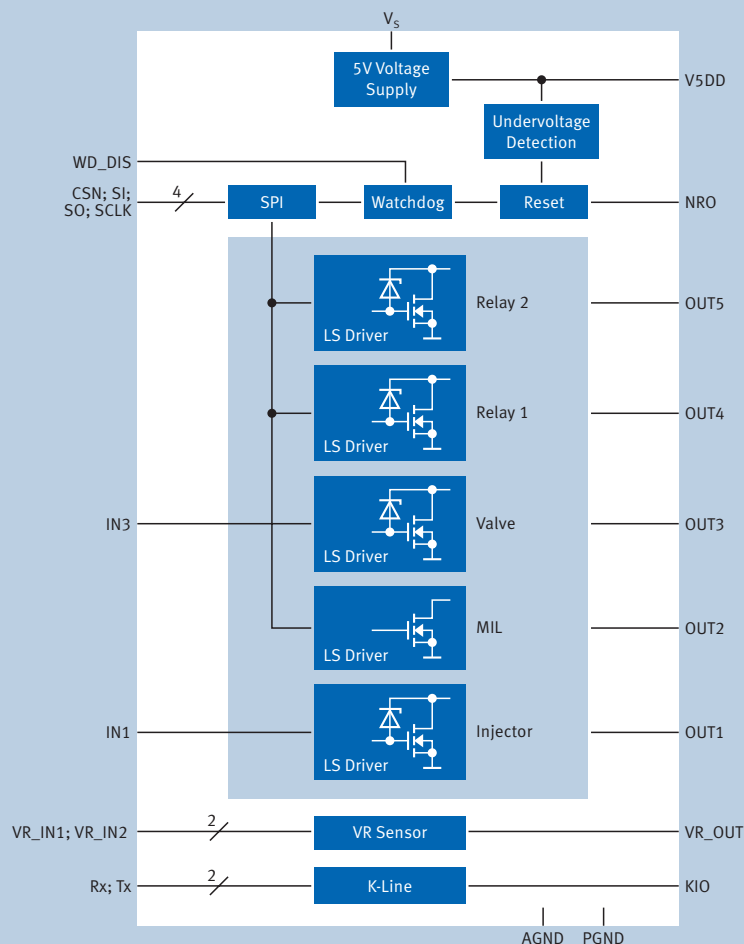
Key Benefits

- Small 150 mil SSOP-24 package saves board space
- One chip solution
- Qualified according automotive standard AEC-Q100



TLE8080

Block Diagram



TLE8080EM

A 5V voltage regulator provides up to 250mA current and features under-voltage reset, power-on reset and watchdog. It includes protection circuits against over-load, short circuit and overtemperature conditions. With an active reset all power stages and the K-line output are disabled and SPI commands are ignored.

The K-line transceiver is a serial link bus interface. It provides bi-directional half-duplex communication interfacing using the special ISO K-line and meets the ISO norm 9141 specification. The K-line bus output is protected against bus shorts and over-temperature conditions.

5 low-side channels are optimized for the use in engine management systems. Recommended loads are:

- 2 channels for Injector valves or similar sized solenoids
- 1 channel for lamps or LEDs
- 2 channels for relays

The Variable Reluctance Sensor (VRS) interface converts an output signal of a VRS into an 5V logic level compatible to 5V input ports of a micro controller.

The diagnosis and control interface is based on a Serial Peripheral Interface (SPI). The SPI is a 16-bits full duplex synchronous serial slave interface.

Product	Supply Voltage Funct. Range [V]	5V Supply I _{V5DD} (max.) [mA]	Injector/Valve I _{OUT} Max. < 2.6A (Nom. = 1.3A)	MIL I _{OUT} Max. < 3A (Nom. = 300mA)	Relay Driver Max. < 350mA (Nom. = 300mA)	VRS I/F Variable Reluctance Interface	K-Line acc. ISO 9141	SPI I/F Diagnosis/Control Interface
TLE8088	6 – 18	150	✓	✓	–	–	✓	–
TLE8080	6 – 18	250	2x ✓	✓	2x ✓	✓	✓	✓

MIL = Malfunction Indication Lamp

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