

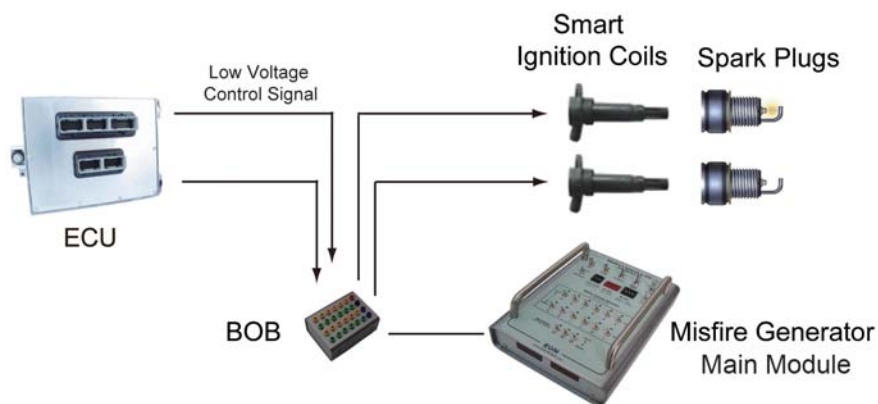
## Misfire Generator GS

The Misfire Generator (MFG) is a specialized instrument used for development, calibration, validation and certification of engine misfire diagnosis. Using the Misfire Generator is essential to the development of engine misfire OBD system that prevents engine misfire to improve emissions and avoid potential damage to the engine and the three-way catalytic converter that occurs with excessive misfire rates.

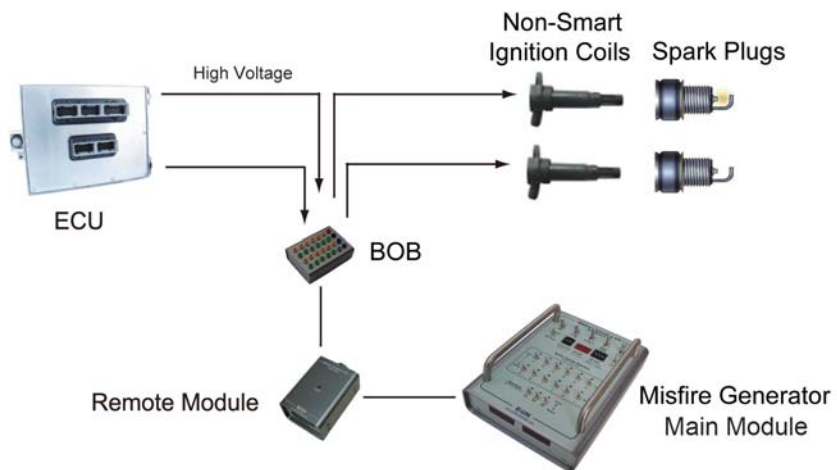
The MFG complies with the new SAE Standard J2901. It supports a wide variety of misfire patterns and ignition systems by employing powerful microprocessor technology to deliver high accuracy, flexibility and upgradeability. It comes from our deep understanding of engine development, long time experience in developing OBD-related tools and input from our OEM customers and EMS suppliers.



For various engine models and manufacturers, there are two different ignition systems: Coils with Integrated Drivers (Smart Coils) and Coils without Integrated Drivers (Non-Smart Coils). Most modern engines are equipped with smart coil ignition systems and early designed engines with non-smart coils. Our MFG consists of a main module and a remote module. The main module performs the misfire pattern controls and the remote module handles high voltage energy dissipation. For smart coil ignition systems only the main module is needed. For non-smart coil ignition systems, both modules are needed.

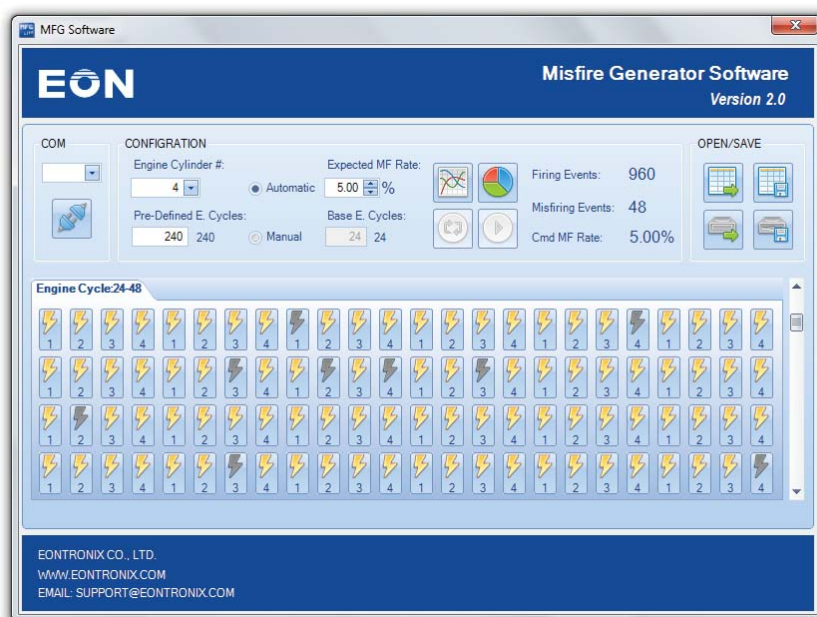


(For Ignition Coils with Integrated Drivers)



(For Ignition Coils without Integrated Drivers)

One unique feature of this new MFG is to come with a PC software which extends the MFG capabilities in many ways. One can setup arbitrary misfire patterns through the software interface and download the configuration into the MFG; one can also save the configuration to a \*.csv file for later use. One can also edit a \*.csv file and download it to the MFG through the PC software. These new features will be very useful in misfire diagnostic calibration and validation.



## Misfire Generator GS

### Compatibilities

- ◆ SAE Standard J2901 compliance
- ◆ Smart ignition coils and non-smart ignition coils support
- ◆ Waste spark ignition systems and Coil-On-Plug (COP) ignition systems support
- ◆ Multi-strike ignition systems support
- ◆ Engine cylinder deactivation function support
- ◆ Arbitrary combinations of cylinders are allowed to participate in misfiring
- ◆ Applicable to engines up to 12 cylinders

### Features

- ◆ Freescale S12XE 16-bit microprocessor-based design for maximum flexibility and easy upgradeability
- ◆ Support USB-serial connection allowing for PC software-based misfire setup
- ◆ Three misfire input methods: Event-based, Engine Cycle-based, and Percent-based
- ◆ LED Displays: showing the misfire rate of applied cylinders and theoretical misfire rate of all cylinders during 100 engine cycles; indicating the cylinders that are misfiring
- ◆ Self-diagnostic function with error codes showing different scenarios of incorrect operation
- ◆ Aluminum alloy housing with compact ruggedized design
- ◆ Sufficient Electrical Protection: Static, Reverse Power and Short Circuit Protection

### Specifications

- ◆ Operating Voltage: 7V DC~33 V DC
- ◆ Operating Temperature: - 40°C to 120°C
- ◆ Input Resistance: > 7 kΩ, Output Resistance: < 110 Ω
- ◆ Main Module - Input Voltage: 0~5 V, Output Voltage: 0~5 V
- ◆ Misfire Rate Range: 0~99.9%, Accuracy: +/- 0.1%
- ◆ Dimensions: 220×165×50(mm) / Weight: 1.5 kg (Main Module)





### Misfire Generator Software

This software is used with the PC Mode switch on the MFG main module. With this software, one can arbitrarily set misfires among the 1000 ignition events. The final setup will be downloaded into the generator through USB-serial port for operation, or saved to a \*.csv file for later edit and upload. With this software, any setup by the panel switches can also be saved as a \*.csv file. One can edit the \*.csv file and download the file with this misfire generator software.

- ◆ USB-serial port communication with a laptop
- ◆ Support \*.csv file format for configuration
- ◆ Support arbitrary misfire patterns

### System Components

- ◆ Main Module
- ◆ Misfire Generator Software (software with a USB-serial adapter cable)
- ◆ Remote Module (optional, only for non-smart coil ignition engines)
- ◆ Break-Out-Box (optional, for easy connection to the vehicle harness)
- ◆ Cables and harnesses (optional)

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