



Fail Safe Tester

Generation of electrical faults and manipulation of signal characteristics

The Fail Safe Tester (FST) is the ideal component to simulate electrical faults, such as cable breaks, short circuits or loss of contact in a controlled and reproducible way, and to manipulate signal paths as well. The goal is to be able to observe the behavior of the “device under test”. With the FST, the signal lines between the control unit and the peripheral can be changed and adapted. For this purpose, the FST is inserted between the HIL system and the ECU under test, or between multiple ECUs.

Up to 160 channels per FST are available. To increase the number of channels, more than one device can be cascaded if necessary. The FST can be used as a standalone device controlled via a CAN or a serial interface. Another option is to combine it with the simulation software CarMaker or the RealtimeMaker from IPG Automotive. Both provide the tester with a graphical user interface. This makes the FST an ideal complement for turnkey test systems from IPG Automotive. The modular and compact structure in a 19” housing allows for easy integration into test designs.

The FST can imitate the following faults:

- Interrupted signal lines (cable breaks)
- Mixed up signal lines
- Short circuits (with other electric lines)
- Increased contact resistance (for example because of corrosion)
- Leakage current (for example due to humidity)
- Loss of contact (loose contact)

The basic functionality is provided primarily by relay switching. In addition, six interconnection lines connecting the respective plug-in cards are available inside the FST. Every signal line can be connected to the interconnection lines via relay contacts. Signals of different cards can therefore be interconnected.

The controller card is an integral part of the FST system. It receives control commands, controls the connections of the internal connection lines, enables measurement via banana jacks and allows for self-diagnosis of the entire system. Furthermore, a variety

of modular plug-in cards (Standard Relay Card, High Current Relay Card, High Voltage Card and Programmable Resistor Card) is available.



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Your benefits at a glance

- Configure the entire FST by software, no need to plug cables manually
- Save and reload the entire test configuration
- Automatize tests completely
- Up to 160 channels in a compact housing
- Expandable by cascading multiple devices
- Modular design for easy connection and extension

➤ Find more information on the Fail Safe Tester on our website at www.ipg-automotive.com/products-services/real-time-hardware/fail-safe-tester



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