

Fault Injection, Signal Conditioning (FISC)

The FISC board provides an open and modular solution to connect the Device Under Test (DUT) to computerized I/O for simulation and test.

Customized signal conditioning is provided using separated PCB, piggy-backed on the FISC board. Furthermore, the solution has break-up and short-circuit functionality for testing abnormal conditions, required when testing robustness and system safety.



Application areas

- Unit test
- HIL testing
- Maintenance and repair test
- Robustness and safety test

Features

Each FISC has 16 channels with functions such as:

- Signal conditioning
 - Built in digital signal conditioning to/from TTL levels
 - Piggy back PCB for customised signal conditioning
- Fault Insertion and switching
 - Three solid state relays for open, short circuit to common supply, short circuit to common ground or other channels.
- LED Indication and measurement point





Technical Specifications:

Status indication and measurement point

- All channels are bi-directional for input and output signals
- All channels are accessible through a standard 2 mm test socket on front panel
- Multi-color status LED for each channel with configurable functionality; threshold level, polarity and ground reference

Fault injection

- Open circuit (Break-Out)
- Short circuit to common ground and supply
- Built-in logic prevents accidental short circuit between supply and ground, it also protects I/O modules during fault injection

Signal conditioning

- Any signal can be converted to a digital input
 - Adjustable threshold 2–25V
 - Opto-isolated TTL outputs to I/O
 - 1 MHz bandwidth
- Use fault injection SSR as high current digital outputs
- High side-, low side- or aux switches towards supply, ground or other channel
- Opto-isolated TTL inputs from I/O
- 5 kHz bandwidth
- Piggy-back area for customized signal conditioning, typical applications:
 - Resistive loads
 - Voltage conversion for analog I/O
 - High precision current measurement
 - Customized fault injection

Computer control functions:

- RS232/485 interface
- Signal status read-out
- Fault injection operation
- Piggyback I/O control
- Fuse monitoring
- Fault injection protection logic (Safety modes)
- Digital input signal configuration (Threshold and polarity)
- Shipped with an easy to use interactive control panel and a LabVIEW driver.

Mechanical parameters

- PCB size: 400x100 mm
- 3U, 10TE according to 19" standard, IEC 60297

Electrical parameters

- Power supply: 24VDC
- 120V channel isolation
- Operating voltage range: 60V within -60V to +60V.
- Max continuous current per channel: 15A
- Max peak current: 100A/1s
- Parallel connection of channels gives up to 170A.

Compliance according to

- RoHS
- WEEE
- EN 61010
- EN 60950
- IEC 60297