Xylanta
Advanced Test Solutions

DeskLab FIU
Multi-channel Scriptable Fault Insertion Unit

powered by Lua

Automotive and industrial control systems are exposed to a wide variety of environmental challenges which may result in control and power signals becoming damaged or corrupted. Simulating these in the laboratory is vital to ensure that they are well handled and correctly identified to allow easy diagnosis and repair.

The use of a fault insertion unit allows error conditions to be applied under the control of a test system. Typical faults include short circuits to ground or other voltages, open circuits and signal to signal shorts. In addition, faults do not happen in isolation and so there is a need for the insertion of multiple faults simultaneously.

The DeskLab FIU is specifically designed to assist engineers in this process by providing 8 controllable fault channels, providing a powerful tool to emulate real situations in the laboratory.

Key Features

Flexible 8 Channel Fault Insertion
- Arranged as 2 banks of 4 channels
- Provides dynamic current monitoring
- Two additional high current relays for power control
- Supports most common fault insertion modes
- Onboard scripting allows standalone usage
- Controllable from a Windows computer via USB or Ethernet
- Software control allows intermittent faults to be simulated

Application Software
- DeskLab Explorer provides a GUI driven configuration interface
- DeskLab Script allows the creation of complex, dynamic scripted tests
- Software supports Windows 7, 8.1 and 10
- Custom application integration possible via SDK
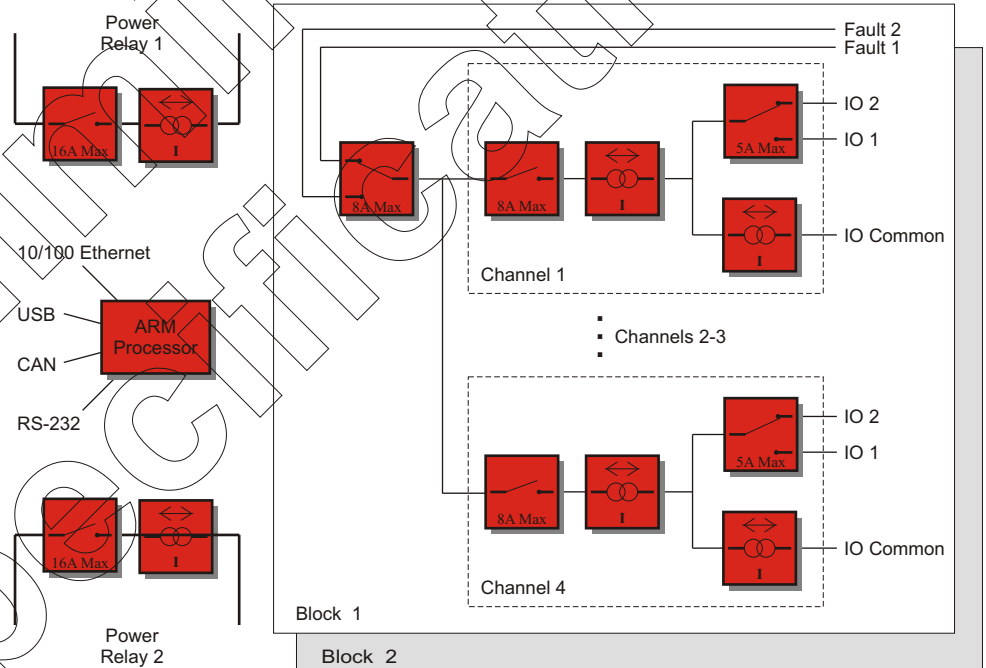
Applications

- Automotive engine controller validation
- FMEA testing
- Power switching for bench test setups
- General laboratory signal control
- Suitable for use with HIL systems
- Aids replication of real-world failure scenarios
- Fully autonomous signal/power switching
- And many others...

DeskLab
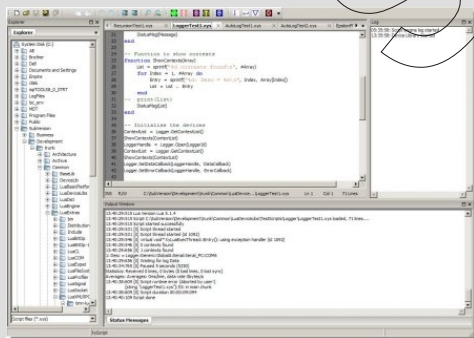
Product Specification

Fault Insertion
- 8 fault channels arranged as 2 banks with current sensing
- 2 separate high current power switch relays with current sensing
- All switched signals isolated from control electronics
- Very flexible configuration of signal and fault routing
- Signals accessible via TE Mate-N-Lok connectors

Per Channel Capabilities
- Source relay: 5A@30V DC max
- Link relay: 8A@30V DC max
- Bi-directional current sense

Per Bank Capabilities
- Fault relay: 8A@30V DC max
- Bi-directional current sense

Power Switching Capabilities
- Power relay: 7A@30V DC / 16A@20V DC max
- Bi-directional current sense

Other Features
- Onboard ARM processor
- USB-2 Full Speed and Ethernet 10/100 interfaces
- CANbus and RS-232 interfaces
- Supports onboard script execution
- Includes Xylanta DeskLab software suite (FIU version)

Other
- Requires external power (8-30V DC @ 1.0A)
- Operating temperature 0°C to 40°C, 85% RH (non condensing)
- Extruded aluminium case, 165mm x 110mm x 35mm
- Weight 500g
- FCC and CE compliant

DeskLab Software

Explorer
- Graphical interface for device configuration and management
- Suitable for static testing

Script
- Fully script driven test environment
- Scripting based on the open-source Lua language
- Suitable for demanding validation with full repeatability
- Supports script development and debugging
- Allows remote debugging of onboard scripts
- Can optionally support other third-party devices

SDK
- Allows control and integration via third-party tools (in development)

General
- Requires Windows 7, 8.1 or 10

For more information email: sales@xylanta.com

DeskLab▶

Onboard Scripting

Scripts can be written in Lua and stored locally for execution either on startup or under external control.

Lua Highlights
- Powerful, fast, and light-weight
- Simple procedural syntax
- Powerful data description constructs
- Dynamically typed
- Automatic memory management
- Widely used and well documented

Key Script Functionality
- Allows control of all relays
- Supports dynamic current monitoring
- Can execute autonomously or under host control
- Remotely debuggable
- Libraries for CAN and RS-232 messaging
- Uses latest Lua 5.3 release

See http://www.lua.org for more information on the Lua script language.

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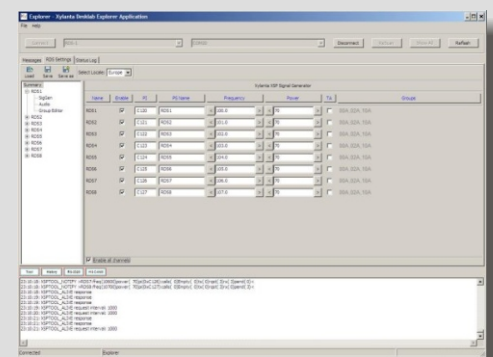
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