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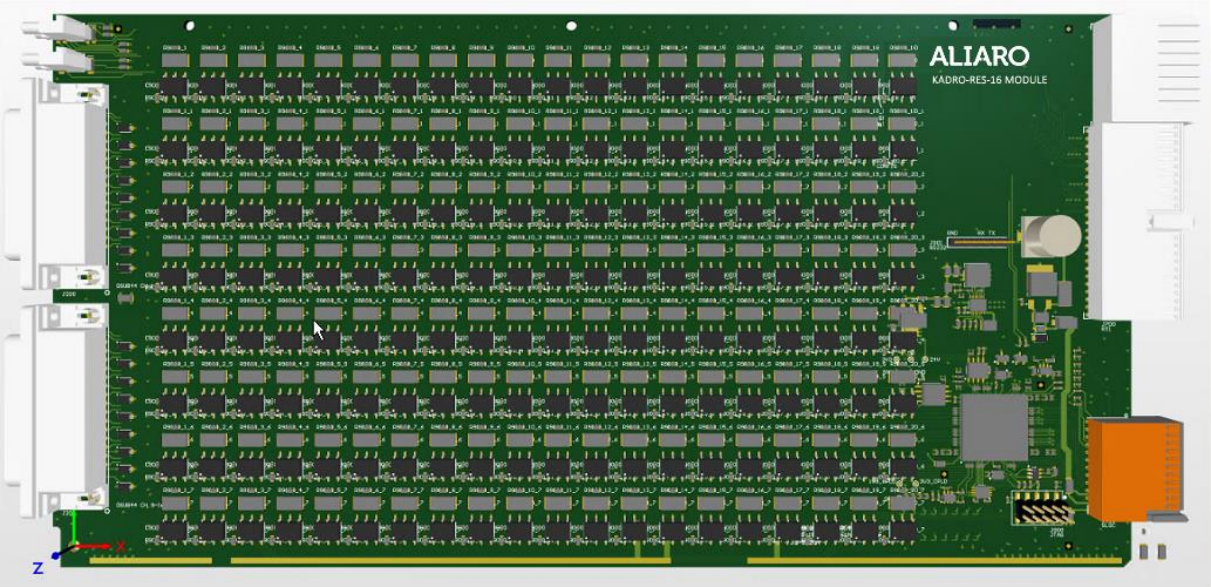
16 Channel Resistor Emulation Board

KADRO-RES-16 for SLSC



Overview

The KADRO-RES-16 is a 16-channel resistor emulation board for applications requiring simulation of resistive sensors.

The KADRO-RES-16 is designed for the National Instruments (NI) Switch Load Signal Conditioning (SLSC) system, to be used in Hardware-In-the-Loop (HIL) simulators.

The board interfaces NI PXI and/or Compact-RIO instrumentation devices for the purposes of developing, verifying, and validating electronic control unit software and hardware.

By using software, such as Aliaro Configurator, the pins can easily be configured and deployed in NI VeriStand.

Application

- ✓ Hardware in the Loop (HIL) testing
- ✓ Emulation of sensors (loads)
- ✓ Fault insertion i.e. validation of faulty wiring or corrupt sensors
- ✓ Simulation industrial sensors and actuators
- ✓ Simulation of engine temperature sensors

Features

- ✓ 60V, 110mA per channel
- ✓ 16 independent and isolated channels
- ✓ 16 programmable channels for resistor emulation
- ✓ 50 seconds programming resistance sequence
- ✓ 2 Expansion Slots for Add-on boards
- ✓ Two common buses per bank with switches to each channel
- ✓ Brake up switch for each channel
- ✓ Short and open circuit simulation
- ✓ Pull up and pull down on each channel
- ✓ Wide resistance range
- ✓ LabVIEW driver included
- ✓ Custom Device Driver for Veristand included

Add-on boards

The KADRO-RES-16 card has two (2) expansion slots for add-on boards for adding additional functionality for enabling more flexibility in the system.

The KADRO-AMP-4 Amplifier Board add-on board amplifies voltage and current making it possible to use standard I/O instrumentation devices for operation. The board supplies four (4) independent channels (bank) with amplifier functionality (enables Analogue and Digital Out).

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Hardware Specifications

Maximum ratings		
Category	Condition	Value
Max. Operating Voltage	Any pin	+60V
Min. Operating Voltage	Any pin	-60V
Max. continuously current	Any pin	110mA

Technical Data		
Category	Condition	Value
No of channels		16
No of banks		2
Power supply		24VDC, +/-5%
KADRO-AMP-4 Current drive	Any pin	100mA per channel
Range	Any pin	1 Ohm to 110 kOhm
Programming resistance sequence	Any pin	50 seconds

Physical Characteristics		
Category	Condition	Value
Module Dimensions	Excluding front handle	144.3mm x 24.5mm x 295,5 mm (H x W x D)
Front Panel Connector		2x 44-pin high-density D-SUB

Environmental		
Category	Condition	Value
Operating Humidity	Relative, non-condensing	10 – 90%
Storage Humidity	Relative, non-condensing	5 – 95%
Operating Temperature	Forced-air cooling from SLSC chassis	0°C-40°C
Storage Temperature		-40°C-85°C

CE Compliance

The KADRO-RES-16 board meets the requirements of the European Directives for electrical equipment for measurement, control, and laboratory:

- 2014/35/EU; Low-Voltage Directive (safety)
- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)