BLOOMY®

The Leader in Automated Test, Data Acquisition and Control Systems

8-Channel Thermocouple Simulator Module

High-precision thermocouple signal conditioning for SLSC

Bloomy's 8-Channel Thermocouple Simulator Module provides eight channels of galvanically-isolated thermocouple simulation and simulates types E, J, K, M, N, and T thermocouples. High-precision digital-to-analog converters which are isolated from each other and from system power provide sub-microvolt resolution and accuracy. Built-in switching provides open-circuit faults as well as switching to system calibration resources.

The module's simulation output is a standard D-sub connector which allows the use of standard copper wire throughout the system, even as far as to the unit under test. The module provides two 10KΩ thermistor inputs to measure the temperature where the copper meets the dissimilar metals. User-supplied thermistors may be located in the backshells of the unit connectors, within the cable harnesses, or anywhere near the dissimilar metal junction. An on-board thermistor may be used if required.

The supplied VeriStand and LabVIEW drivers use the user-supplied thermocouple type, the desired simulated temperature, and the feedback from the thermistors to control the module. Each channel's thermocouple type and junction temperature reference may be set independently.

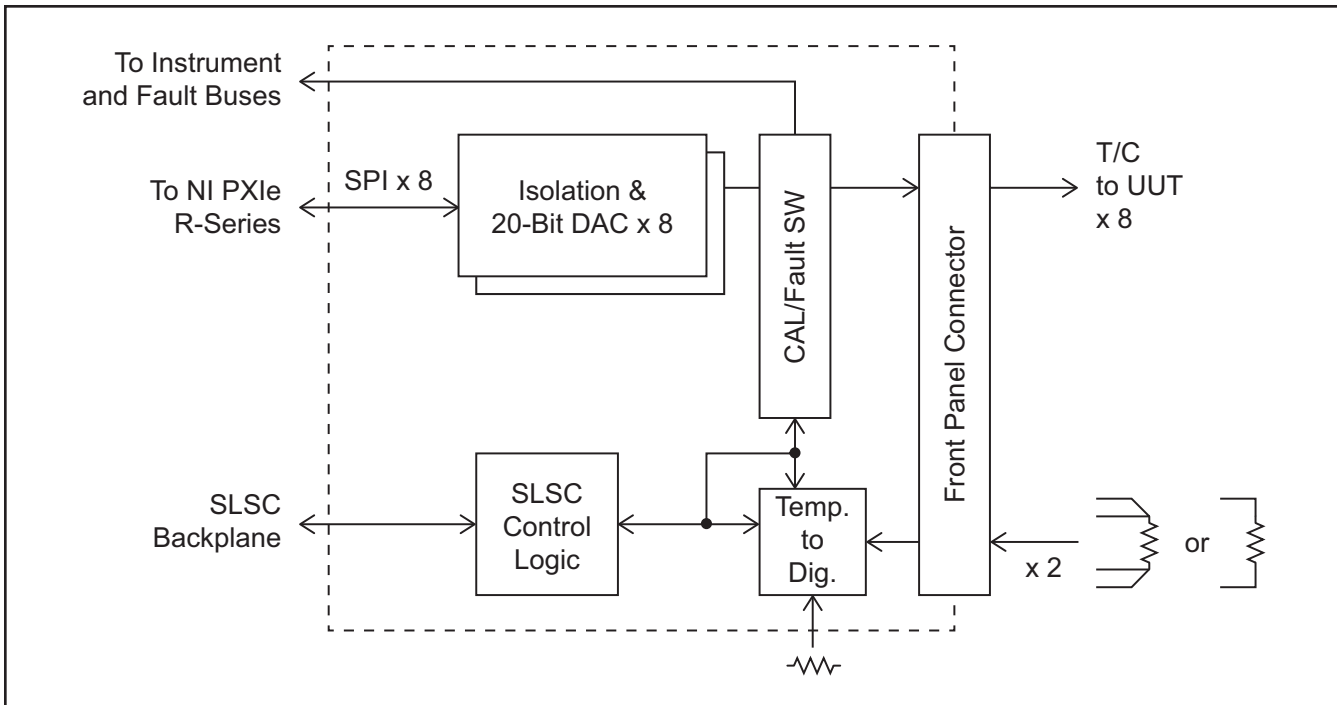This module requires the use of NI's PXIe-7820 or better.

APPLICATIONS

- Real-time hardware-in-the-loop (HIL)/closed-loop test systems
- Electronic engine control (EEC) test systems
- Flight control computer (FCC) test systems
- Environmental control test systems

FEATURES

- 8-channels of isolated high-precision voltage output
- Isolated to ±60V channel to channel and channel to ground
- Simulates types E, J, K, M, N and T thermocouples
- On-board and remote cold junction compensation
- On-board open-circuit fault injection capability
- Automatic calibration of output voltage using SLSC calibration resources as references
- High-stability, low noise circuits for long-term reliability and high accuracy

FUNCTIONAL DIAGRAM

SPECIFICATIONS

INSTRUMENTATION	
Meets National Instruments SLSC Module Specification	
Requires	NI PXIe-7820 (or better)
Channels	8 thermocouple simulations, types E, J, K, M, N, T (independently selectable per channel)
Cold-Junction Compensation	Two external 10ΩK thermistors, on-board solid-state temperature sensor
Isolation	±60V channel/channel, channel/ground
Range	±100mV
Resolution	0.5µV
Bandwidth	160Hz
Connector	HD44F
SOFTWARE	
Software Interface	LabVIEW driver 2015+ VeriStand driver 2015+

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
1200-00031	8-Channel Thermocouple Simulator for SLSC

Call 860-298-9925 or visit
www.bloomy.com

DS023 011419