DATA SHEET

EX1200-7008

MULTICHANNEL UNIVERSAL RTD SIMULATOR

FEATURES

Eight channel, universal, 2-/4-wire RTD simulator

Fast, monotonic, glitch-free resistance value programming

Suitable for simulating resistors, platinum/copper/nickel RTDs

Suitable for pulsed and continuous excitation inputs

Direct temperature value programming

Extensive triggering capability

Synchronize level changes with input measurements to facilitate test sequencing

VTI Instruments

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RELIABLE DATA FIRST TIME EVERY TIME

OVERVIEW

The EX1200-7008 is a multichannel resistance temperature detector (RTD) sensor simulationcard, with the versatility to precisely simulate a variety of RTD types on a single module. This card provides eight channels of independent resistance outputs, which can be configured under program control to characterize the behavior of a measurement/signal conditioning system. Synchronized simulation of multiple channels can be used to create virtual thermal environments for evaluating the performance of safety systems.

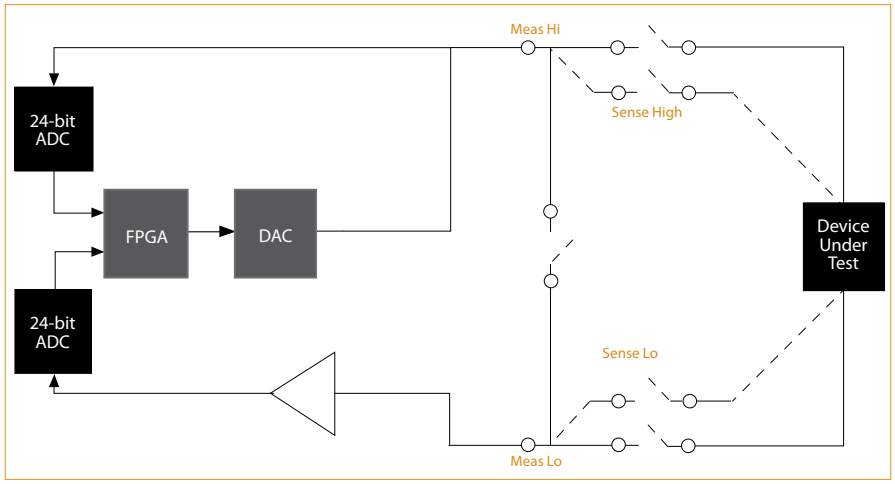
SUPERIOR ACCURACY AND STABILITY

The majority of RTD simulators on the market use series relay ladders that switch relays in and out of the circuit to achieve the desired value. These modules are subject to relay contact bounces that can create oscillations on the output before settling to the commanded resistance value. These oscillations appear as unwanted "thermal shocks" to the system under test. Ageing and contact degradation will further alter the performance of these types of cards. The EX1200-7008 implements advanced solid-state servo mechanisms to actively simulate resistance values. This method produces bounce-less changes in the resistance,and smooth ramps at the required rate of change. Ageing effects are nullified, as the resistance value is continuously monitored in a closed loop and corrected for errors.

WIDEST RANGE OF RTD SIMULATION

Each EX1200-7008 can be programmatically configured to simulate platinum, copper, and nickel RTD types with configurable "a" value and meets the DIN, IEC, JIS 1989, and ITS-90 curve fitting standards. Required temperature values can be directly commanded, eliminating the need to derive conversion algorithms in application software. Resistance values up to 6500 Ω with 125 mΩ resolution can be realized, with the ability to achieve 20 mΩ resolution for lower ranges. It can also accept continuous or pulsed type current excitation sources, which makes it truly "universal".

EX1200-7008 MULTICHANNEL UNIVERSAL RTD SIMULATOR



Specifications

Number of Channels	8
Range of Temperature Simulation	As per standards (programmable per channel)
Resolution of Temperature Simulation	0.1°C
Accuracy of Temperature Simulation	± 0.1°C
Range of Resistance Simulation	4 Ω to 10,000 Ω
Resolution of Resistance Simulation (Typical)	0.020 Ω
Accuracy of Resistance Simulation	±0.1% of Set value and ±0.075 Ω offset
Connections	2, 3, and 4 wire
Output state	Short, Open, Programmed Resistance, Programmed Temp
Supported RTD Sensor Types	
PLATINUM	(Pt 100, Pt 200, Pt 500, Pt 1000)
COPPER	(Cu 10, Cu 100)
NICKEL	(Ni 100, Ni 120)
Temperature Scales	ITS 90
PT sensors Curves	a = 0.385 (DIN) or a = 0.392 (US)
Resistance Settling Time	1.3 ms after excitation current stabilization * Note that rise time of the excitation current will add to resistance settling time
Excitation / Input Current	+/-10.5mA(max) (pulsed/continuous), 1 mA to 10 mA (DC to 2.5 ms pulse width and MIN 10mSec PRI) Max
Differential Voltage	9.5 V (max)
Maximum Power Dissipation	0.1 W per channel
DC Offset Error	< 10 µV
Isolation	300V
Connector Type	44-pin HD D-sub

Ordering Information

EX1200-7008	8-channel, universal RTD simulator, EX1200 plug-in-module

Accessories and Tools

70-0367-007	EX1200-TB44, 44p DIN connector with internal CJC reference
27-0390-044	44-pin HD D-sub mating connector, backshell and pins, crimp style
70-0297-001	Crimp tooling, includes handle and positioner, 22 AWG