

Model 3210 Series Thermometry Auto-Switch

LOW THERMAL 8 CHANNEL ACTIVE PRE-HEAT SPRT ADAPTER

First Commercial Precision Temperature Interface Switch with Programmable Currents



3210T

3210

3210 SERIES FEATURES

- ◆ Connect up to 8 PRT's/SPRT's at One Time
- ◆ Supports Non-SPRT Probes or devices with currents other than 1 mA
- ◆ Programmable Pre-Heat Currents from 20 μ A to 150 mA
- ◆ Pre-Heat Available and Set-able on an Individual Channel Basis
- ◆ Ideal for Use with Fixed Points and Comparison Furnaces
- ◆ 5 Way Front Panel Connectors Allow Easy Front Panel Access for Spade Lugs
- ◆ Multiple Interfaces can be integrated
- ◆ Front Panel Operator Connection with Touch Screen Control

Guildline's NEW 3210 Series of Thermometry Auto-Switch with Pre-Heat automates temperature measurements including fixed points and thermometer calibrations. Up to eight SPRTs or other temperature devices can be connected with individually programmable DC currents from 20 μ A to 150 mA.

Both the 3210 and 3210T Thermometry Adaptor are low noise, low thermal contact, high isolation interface switches and connection panel that allows multiple PRTs, SPRT's or other temperature devices to be easily connected to a measurement device such as Guildline's 6640T or 6622T Temperature Bridge. The 3210 Models can be connected directly to a Guildline Temperature Bridge with no need for a scanner.

These models have a built-in switch to automatically measure multiple connected devices, while using individual programmable pre-heat/keep-warm currents in between measurements. Both IEEE 488.2 and USB connections are provided and the 3210 Thermometry Adaptor can be controlled by Guildline's PC based BridgeWorks software package.

The 3210 Thermometry Adaptor Provides Easy Access for Automating up to Eight PRT's or SPRT's with User Programmable Channel Currents!

The 3210 Series can also be connected to a Guildline's 6664C Scanner to allow multiple reference standards to be used, or both resistance and temperature measurements to be made without operator intervention.

These capabilities greatly improve the measurement and calibration throughput of temperature laboratories and can easily and quickly automate the measurement of single or multiple PRT's and SPRTs.

Model 3210 Series Thermometry Auto-Switch with Pre-Heat

The 3210 Series includes pre-heat capability for PRTs, SPRTs and other temperature devices. This capability dramatically improves the settling time and thermal stability. Programmable “pre-heat” current sources on each channel enables true automation of root 2 measurements to determine the self-heating effects of multiple PRT’s. Each channel can be programmed independently to provide any required current, then provide the associated root 2 current – all without operator intervention.

The ability to specify a pre-heat current, rather than always defaulting to 1 mA, is very important when using non-PRT thermometers such as RTDs and thermistors. The use of a 3210 Thermometry Adaptor makes no material contribution towards uncertainty based on noise or repeatability. Incorporating a Guildline proprietary design, the 3210 Thermometry Adaptor has no measured effect on the uncertainty of Guildline’s 6640T or 6622T Thermometry Bridges throughout their entire range of operation. This is accomplished as the 3210 design incorporates 8 independent isolated current sources to avoid crosstalk interference; and does not use the current source built into a temperature bridge. This design eliminates any additional errors and uncertainties due to loading effects.

Thermometry measurements connected to the 3210 Interface front panel are conducted in **true four-terminal mode** to allow long test leads or extensions to be used without worry about Thermal EMF’s. Since excitation current is DC, reactance introduced by the probe and probe leads does not affect measurement accuracy.



The 3210 Thermometry Adaptor provides automation support for the calibration of multiple PRTs, SPRT’s or other thermometer devices.

Complete automation for both calibrations and research experiments can be easily accomplished with Guildline’s complete Temperature Measurement System. These Systems includes the modular 6640T or 6622T Temperature Bridge (various available models), 3210 Thermometry Adaptor, 6664C Scanner if multiple reference standards are required or if resistance measurements are to be automated, and the highly stable 6634A Temperature Stabilized Resistance standards (e.g. with user specified values including 1 Ω , 10 Ω , 25 Ω , 100 Ω , 300 Ω , and 1 k Ω standards).

PC based BridgeWork’s™ Software comes with both the System and/or the Temperature Bridge as a stand-alone instrument and allows multiple tests to be sequenced and grouped to run even when operators are not present. Multiple 3210 Models can be used in a single Temperature Measurement System.



Model 3210 Series Thermometry Auto-Switch with Pre-Heat

Customers who purchase a 3210 Thermometry Adaptor or Temperature Measurement System can make multiple precision temperature measurements faster and with better uncertainties. The Guildline Temperature Measurement System provides more automation features than any competing approach, thus providing more efficiencies and cost savings. The is also the least expensive approach to equipping a temperature laboratory because of substantially reduced operating, calibration, training and ongoing life cycle costs; and is backed by a two year Guildline warranty. No other Temperature Measurement System in the world offers these advantages, or this flexibility, to customers.

SPECIFICATIONS				
Current Ranges	20 μ A to 150 mA/Channel ¹		Current Accuracy	\pm 0.05%
Input Power	External 5V DC supply with input power 95~260V, 50/60Hz \pm 10%			
Input Connectors	8 Total with 5 Way Binding Posts (Gold Flashed)			
Environmental	Temperature		Humidity	
Operating	18 $^{\circ}$ C to 28 $^{\circ}$ C		15% to 80% RH	
Storage	-20 $^{\circ}$ C to 70 $^{\circ}$ C		15% to 80% RH	
Dimensions	Height	Width	Depth	Weight
millimetres	143 mm	451 mm	420 mm"	7.5 kg
inches	5.6"	17.7"	16.5"	16.5 lbs

1 – Up to a maximum of 750 mA total output all channels.

Unparalleled Support

Guildline Instruments provides an **industry leading two year warranty** on this device and all associated resistance standards. We know that the 3210 Series **will work for you** out of the box and in the future... and we back it up.

ORDERING INFORMATION	
3210T	8 Channel Low Thermometry Adapter with Current for 6640T
3210	8 Channel Low Thermometry Adapter with Current for 6622T
	Operation Manual and Certificate of Conformance included
6664A-11-2	Low Thermal Lead Pair w/Gold Plated Banana Plugs, 1M length
6664A-12-2	Low Thermal Lead Pair w/Gold Plated Banana Plugs, 2M length
6664A-13-2	SCW Lead Pair with gold plated banana plugs X m (specify)
*Other Precision Leads Are Available – Call and tell us your requirements	
/Controller	System Controller with IEEE and Software Integrated
IEEE-PCI	NI IEEE-488.2 Interface for a PCI slot (Win 9X/NT/ME)
IEEE-2m	NI IEEE-488.2 Interface cable, 2m double shielded

Guildline IS DISTRIBUTED BY:

Guildline Instruments Limited
 21 Gilroy Street, PO Box 99
 Smiths Falls, Ontario
 Canada K7A 4S9
 Phone: (613) 283-3000
 Fax: (613) 283-6082
 Web: www.guildline.com
 Email: sales@guildline.com