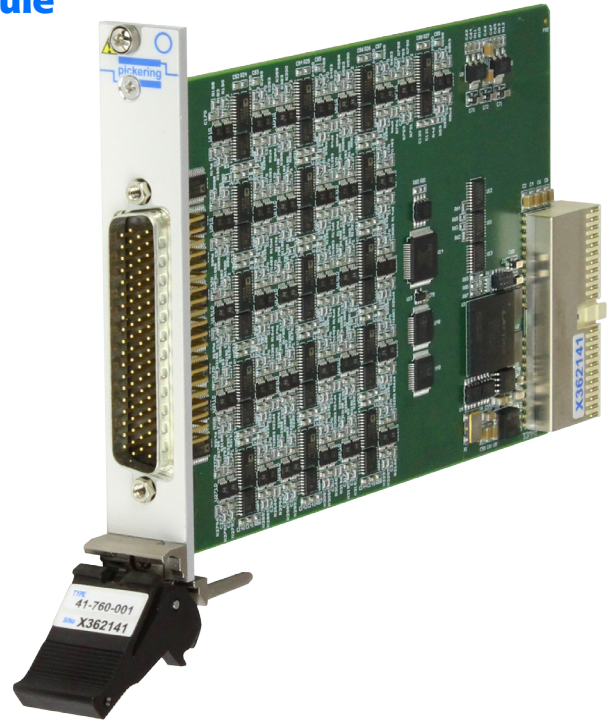


41-760

Millivolt Thermocouple Simulator Module

- 32, 24, 16 or 8 Channel Low Voltage Source
- Ideal For Thermocouple Simulation
- +/-100mV, +/-50mV and +/-20mV Output Ranges
- 0.7µV Voltage Resolution (+/-20mV Range)
- Two-Wire Output for Each Channel
- Remote Sense for Breaking Ground Loop Effects
- Open Circuit Simulation
- Supported in PXI or LXI Chassis
- Kernel and VISA Drivers
- 3 Year Warranty



The 41-760 is a low voltage source module ideal for simulating the operation of a thermocouple, available with a choice of 32, 24, 16 or 8 channels. Each channel of the 41-760 provides a low voltage output across two connector pins capable of providing $\pm 20\text{mV}$ with $0.7\mu\text{V}$ resolution, $\pm 50\text{mV}$ with $1.7\mu\text{V}$ resolution and $\pm 100\text{mV}$ with $3.3\mu\text{V}$ resolution, covering most thermocouple types.

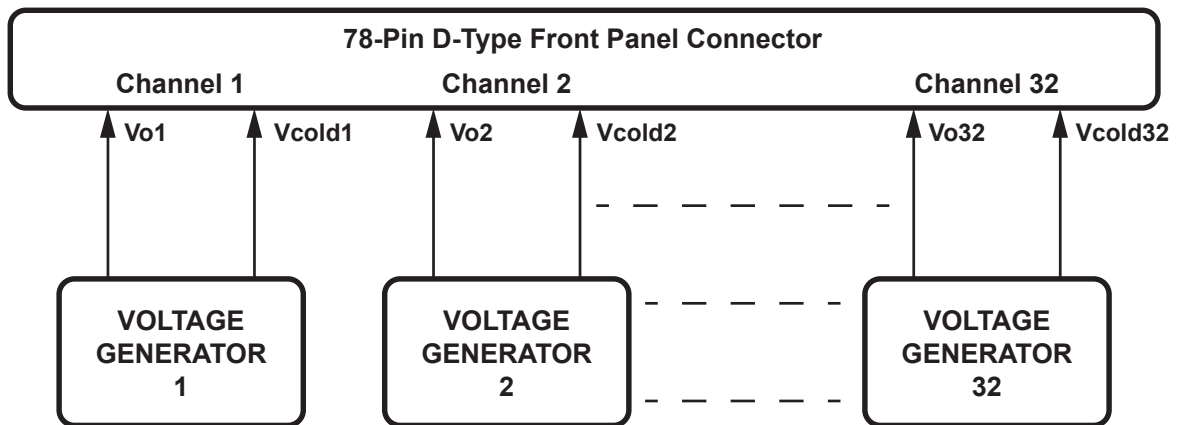
The use of two wire outputs ensures that the 41-760 can be used to accurately simulate low voltages even in the presence of common mode voltages in the system. Each V_{cold} connection is independent permitting the 41-760 to be connected to multiple cold junctions.

Each simulation channel is able to provide an open circuit setting to simulate faulty wiring connections to a sensor.

For improved accuracy each channel of the Low Voltage Source carries accurate calibration data stored in EEPROM on the module. Regular calibration of the channels is not necessary.

When used for Thermocouple Simulation the 41-760 can be connected straight into the measurement system, bypassing the need for Isothermal Blocks and Cold Junction Compensation. To aid in this, Pickering offers a 78-pin connector solution that has 32, 24, 16 or 8 copper twisted pairs terminated with mini copper thermocouple plugs. Use of copper connections minimises offset voltage generation in the connection interface.

Alternatively Pickering can also supply connector blocks that convert the copper connections of the module's 78-pin connector to that of the required thermocouple type.



Functional Diagram for the 41-760-001 Millivolt Thermocouple Simulator Module

Specification

Low Voltage Channels

Number of Channels:	32, 24, 16 or 8
Output Voltage Range:	$\pm 20\text{mV}$, $\pm 50\text{mV}$ and $\pm 100\text{mV}$ ranges (V_o to V_{cold}).
Voltage Resolution:	0.7 μV nominal ($\pm 20\text{mV}$ range), 1.7 μV nominal ($\pm 50\text{mV}$ range), 3.3 μV nominal ($\pm 100\text{mV}$ range).
Common Mode Output:	Up to 1V common mode peak output voltage, better than 80dB common mode output rejection ratio.
Output Resistance:	50 Ω nominal
Accuracy*:	0.1% $\pm 5\mu\text{V}$ ($\pm 20\text{mV}$ range), 0.1% $\pm 10\mu\text{V}$ ($\pm 50\text{mV}$ range), 0.1% $\pm 15\mu\text{V}$ ($\pm 100\text{mV}$ range).

* Valid at $\pm 10^\circ\text{C}$ from calibration temperature (factory calibrated at 21°C).

Power Off State: Open circuit

Software support: Supplied with software that responds to a voltage instruction on the selected channel.

Power

+3.3V	+5V	+12V	-12V
250mA	100mA	200mA	200mA

Physical Parameters

Physical characteristics:	One slot, 3U PXI
PCI Interface:	33MHz, 32 bit address, 16 bit data Interface is compatible with PXI, PXI Express Legacy and PXI Express Hybrid slots.
Connectors:	78-pin male D-type carrying low voltage source channels.

Product Order Codes

32 Channel Millivolt Thermocouple Simulator	41-760-001
24 Channel Millivolt Thermocouple Simulator	41-760-002
16 Channel Millivolt Thermocouple Simulator	41-760-003
8 Channel Millivolt Thermocouple Simulator	41-760-004

Accessories

78-pin D-type to 32off mini copper thermocouple plugs, 1m length.*	41-760-801-1m
78-pin D-type to 24off mini copper thermocouple plugs, 1m length.*	41-760-802-1m
78-pin D-type to 16off mini copper thermocouple plugs, 1m length.*	41-760-803-1m
78-pin D-type to 8off mini copper thermocouple plugs, 1m length.*	41-760-804-1m

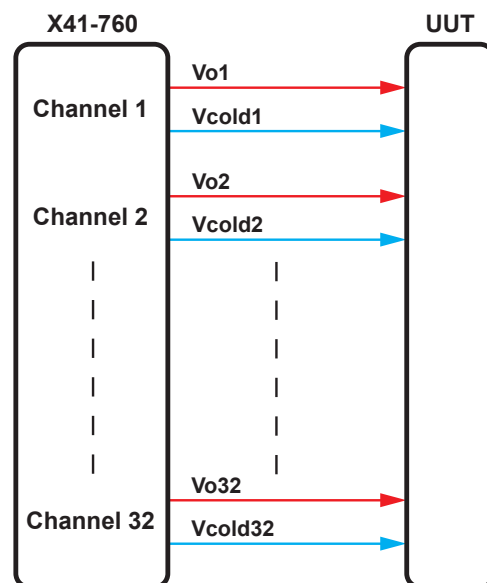
*Other lengths are available.

For applications requiring specific thermocouple wiring and connector types. please contact your local Pickering Sales Office.

Mating Connectors & Cabling

For connection accessories for the 41-760 please refer to the **90-006D** 78 pin D Type Connector Accessories data sheets where a complete list and documentation can be found for accessories, or refer to the Interconnections Solutions catalog.

Pickering Interfaces is dedicated to developing its Millivolt Thermocouple Simulation range. If there are any sensor types or features that are not currently available, please contact your local sales office with details.



Using 41-760-001 directly connected to UUT for Thermocouple Simulation

Programming

Pickering provide kernel, IVI and VISA (NI and Agilent) drivers which are compatible with all Microsoft supported versions of Windows and popular older versions. The VISA driver is also compatible with Real-Time Operating Systems such as LabVIEW RT. For other RTOS support contact Pickering. These drivers may be used with a variety of programming environments and applications including:

- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C#)
- **Agilent VEE**
- **Mathworks Matlab**
- **Marvin ATE Easy**
- **MTQ Testsolutions Tecap**
- **Tecap Switching**

Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries.

Operating/Storage Conditions

Operating Conditions

Operating Temperature: 0°C to +55°C
Humidity: Up to 90% non-condensing
Altitude: 5000m

Storage and Transport Conditions

Storage Temperature: -20°C to +75°C
Humidity: Up to 90% non-condensing
Altitude: 15000m

PXI & CompactPCI Compliance

The module is compliant with the PXI Specification 2.2. Local Bus, Trigger Bus and Star Trigger are not implemented. Uses 33MHz 32-bit backplane interface.

Safety & CE Compliance

All modules are fully CE compliant and meet applicable EU directives: Low-voltage safety EN61010-1:2001, EMC Immunity EN61000-6-1:2001, Emissions EN55011:1998.

PXI & LXI Chassis Compatibility

Compatible with all chassis conforming to the 3U PXI and 3U cPCI specification. Compatible with Legacy and Hybrid peripheral slots in a 3U PXI Express chassis.

Compatible with Pickering Interfaces LXI Modular Chassis. For information on driving your switching solution in an LXI environment refer to the LXI Product Catalog.



Latest Details

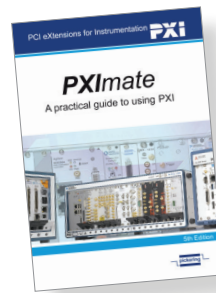
Please refer to our Web Site for Latest Product Details.
www.hkaco.com



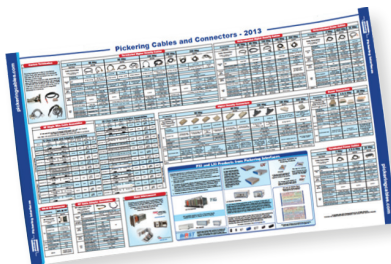
Please refer to the 200 page Pickering Interfaces "**Connection Solutions**" catalog for the full list of connector/cabling options, including drawings, photos and specifications. Available in either print or as a download. Alternatively our web site has dynamically linked connector/cabling options, including pricing, for all Pickering PXI modules.



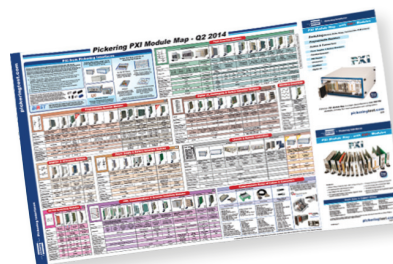
"**The Big PXI Catalog**" gives full details of Pickering's entire range of PXI switch modules, instrument modules and support products. At over 500 pages, the Big PXI Catalog is available on request or can be downloaded from the Pickering website.



Ever wondered what PXI is all about? Pickering Interfaces' "**PXImate**" explains the basics of PXI and provides useful data for engineers working on switch based test systems. The PXImate is available free on request from the Pickering website.



The "**Cables & Connectors Map**" - outlines the cable and connector options available for all PXI Modules.



The "**PXI Module Map**" - a simple fold-out selection guide to all Pickering's 1000+ PXI Modules.

需要详细资料？请现在通过 sales@hkaco.com 联系我们。

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