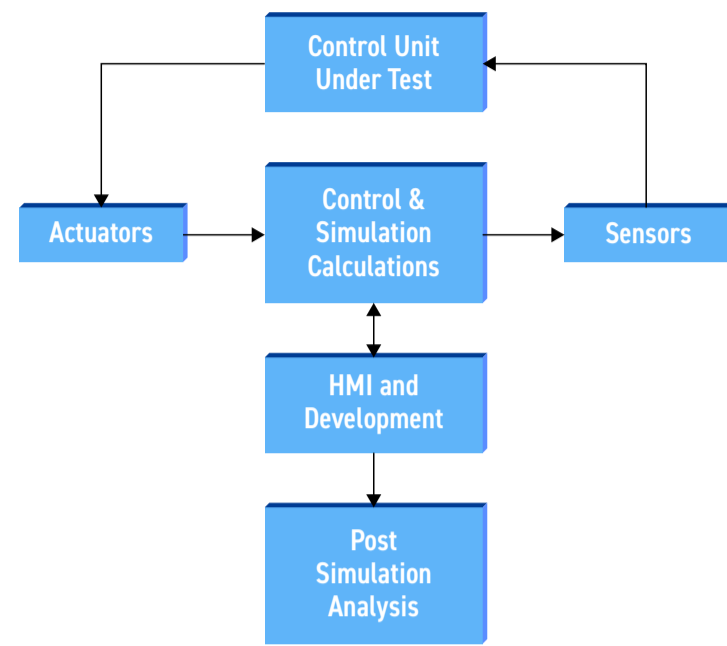The **PXI/PXIe** icon denotes that modules are available in both **PXI** and **PXIe** formats. Pickering is committed to making many more of its **PXI** products available as **PXIe**.

HARDWARE-IN-THE-LOOP & FAULT INSERTION

Hardware-in-the-Loop

Hardware-In-the-Loop Simulation (HILS) connects real signals from a controller to a test platform that simulates the final system's operation. Electronic simulators simulate the ECU's sensor inputs, and measurement instrumentation is used to capture and verify the ECU control outputs. The goal is to make sure that the ECU operates correctly in a known good circumstance and confirm it will operate safely when something goes wrong. An example could be an anti-lock braking system; if the driver steps on the brake pedal and a wheel sensor has failed due to a broken wire, the braking system still needs to stop the vehicle as quickly as possible.
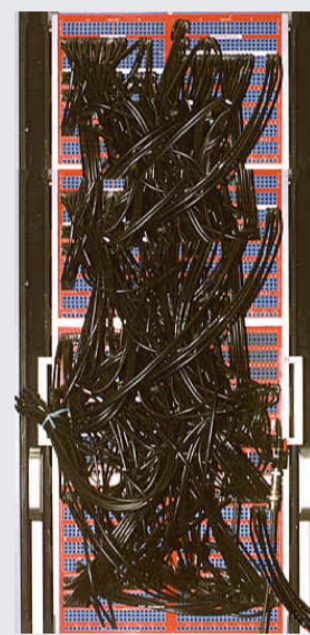
Design and verification iterations follow precisely as if the actual product were being implemented. All the possible scenarios that can be imagined involving countless combinations of different faults can be reproduced, enabling the ECU or controller to be comprehensively exercised without incurring the cost and time necessary to create the actual set of circumstances and perform the real physical tests.

HILS Model Showing the Simulation of an Operating Environment

Fault Insertion

Safety-critical ECUs will usually go through a certification process where a series of faults are introduced. The ECU response is checked to see that it operates in a safe and predictable manner. A manual patch panel is often employed to inject the faults. Cables are used to connect the ECU's I/O lines to stimulus and measurement instrumentation. The I/O lines may be disconnected to simulate open-circuits or tied together to simulate short-circuits to ground, voltage sources, or other I/O lines. An engineer moves the patch cables to simulate a desired fault and then measures the results. However, this arrangement has many inherent disadvantages.

One obvious issue is size, as patch panels tend to be large. The operation is also slow and prone to error, leading to a lack of repeatability. Maintenance and labor costs are high, and operation requires the accumulation and documentation of a skilled knowledge base. A traditional fault insertion system still in use is shown.

Quickly and precisely reproducing a failed test condition is a major advantage. Automating this type of test secures the best way of producing a traceable report, free from human error. The ability to gain software control of both instrument routing and the insertion of real-time electrical faults greatly enhances the testing process. Fault insertion switching automates the fault insertion process. The principal is simple: switching modules sit between the simulator (test system) and the DUT (ECU/controller) and either pass the signals through unchanged or add a range of fault conditions.

Most applications require the following faults to be modelled as a minimum:

- Open Circuit Connections to DUT
- Short Circuits between DUT pins
- Short Circuits to Ground or Power
- Resistive Faults

Traditional Fault Insertion System using a Patch Panel to inject Faults manually

PROGRAMMABLE RESISTORS/RESISTIVE SENSOR SIMULATORS

	Resistor Modules												Precision Resistor Modules							
Features	• Up to 2.5W, 5W or 10W Power Handling per Channel			• Fixed Value Resistor Modules • User Specified Values			• Additional Relay Option to Extend Resistance Range		• Up to 15W Resistor Load	• Additional Relay Options • Short & Open Simulation • Simple Software Control	• Fast Operating Speed & Long Service Life	• High Density Programmable Resistor • Custom Options	• High Density Potentiometer Module • Custom Options	• Very High Accuracy & Stability • Fine Setting Resolution		• Emulates RTDs • High Accuracy, Fine Resolution		• Emulates Resistive Strain Gauge Bridge Circuits	• Simple Software Control • Short & Open Simulation	
Model Family	40-251	40-252	40-253	40-280	40-281	40-282	40-290	40-291	40-292	40-293	40-294	40-295	40-296	40-260	40-261	40-262	40-263	40-265	40-297A	40-298
Configurations	Programmable Resistor			Fixed Value Selectable Resistors	Dual Selectable Resistors	Fixed Value Potential Divider	Programmable Resistor		Programmable Load Resistor	Programmable Resistor		Programmable Resistor	Programmable Potentiometer	Precision Programmable Resistor	PT100 RTD Simulator	PT1000 RTD Simulator / PT100 RTD Simulator	PT500 RTD Simulator / PT1000 RTD Simulator	Strain Gauge Simulator	Precisión Programmable Resistor	
Number of Channels	1, 2, 4 or 8	1, 2 or 4	1 or 2	24 or 48	12 or 24	12 or 24	2	4	1	2 or 4		3, 5, 6, 10 or 18	1, 2, 3, 4, 5 or 9	3	2	6, 12 or 18	4, 8, 12, 16, 20 or 24	2, 4 or 6	3, 4, 6, 9 or 18	
Resolution	0.125, 0.25, 0.5, 1 or 2 Ω						16-Bit	8-Bit	8-Bit	0.25 Ω, 0.5 Ω, 1 Ω or 2 Ω		8, 12, 16 or 24-Bit		<10 mΩ	<2 mΩ / <15 mΩ	<8 mΩ / <90 mΩ	<50 mΩ / <100 mΩ	<2 mΩ	<10,12.5,20 or 25 mΩ	0.125, 0.25, 0.5, 1 or 2 Ω
Accuracy	Module Accuracy ±0.3% +Resolution			User Specified			Resistor Accuracy 0.5%		Resistor Accuracy 5% ±0.5 Ω	Resistor Accuracy 1% +Resolution		Resistor Accuracy ±0.5% (±1% >1 MΩ)		Module Accuracy 0.1%	Module Accuracy ±0.08% ±70 mΩ	Module Accuracy 0.1%		Module Accuracy 0.03%	Module Accuracy 0.06%	Module Accuracy ±0.2% +Resolution
Range	Up to 22.3 MΩ		Up to 102 kΩ	User Specified			0.5 Ω to 32 kΩ	0.5 Ω to 128 Ω	40 Ω to 295 Ω, 10 Ω to 2.56 kΩ	Up to 131 kΩ		Up to 33.5 MΩ	Up to 16 MΩ	90 Ω to 8 kΩ	1.5 Ω to 2.9 kΩ / 10 Ω to 36 kΩ	90 Ω to 250 Ω / 900 Ω to 2.5 kΩ	40 Ω to 900 Ω / 200 Ω to 4.5 kΩ	400 Ω to 9 kΩ	350 Ω Bridge	1 kΩ, 1.5 kΩ, 2 kΩ or 3 kΩ Bridge	Up to 22.3 MΩ
Max Resistor Power	2.5 W	5 W	10 W	0.5 W			1 W		15 W	0.5 W				100 mW						0.5 W
Typical Operate Time	3 ms			0.5 ms					1 ms	3 ms		0.5 ms		3 ms						0.3 ms
Connector Type	37-pin D-type			96-pin Micro-D			68-pin Micro-D		9-pin D-type	37-pin D-type				15-pin D-type and 9-pin D-type			26-pin D-type & 9-pin D-type		37-pin D-type	
Width (PXI-1, PXI-hybrid)	1-Slot													1-Slot		1 or 2-Slot			1-Slot	

BATTERY SIMULATORS

	Battery Simulators	
Features	• Ideal For Battery Stack Emulation	• Simulate Power Supplies of Cellular Phones & Other Portable Battery Devices
Model Family	41/43-752A	41-753
Configurations	Variable voltage source with current source and current sink	
Number of Channels	2, 4 or 6	1
Input Voltage	+3.3V, +5V & ±12V from PXI backplane	+5 V from PXI backplane
Output Voltage	Adjustable 0 to 7 V Stackable to 700V	Adjustable 0 to 6 V
Max Current	300 mA Source 100 mA Sink	2.8 A Source 0.5 A Sink
Connector Type	37-pin D-type	25-pin D-type
Width (PXI-1, PXI-hybrid)	1-Slot	

SWITCH SIMULATORS

	Switch Simulators	
Features	• Simulates Leaky or Dirty Contacts in Automotive Test Applications • For 12V or 24V Systems	
Model Family	40-480	40-485
Configurations	Automotive Switch Simulator	
Number of I/P Channels	–	
Input Channel Type	–	
Number of O/P Channels	8, 16 or 32	Single or Dual,8 or 16
Output Channel Type	Leaky or Dirty Switch Simulation	
Connector Type	37-pin D-type	
Width (PXI-1, PXI-hybrid)	1-Slot	

SENSOR/TRANSDUCER SIMULATORS

	Thermocouple Simulators		LVDT/RVDT/Resolver Simulator	Analog Output/Current Loop Simulator
Features	• Millivolt Source • Multiple Channels	• Millivolt Source • Independently Isolated Channels	• Wide Frequency Range • Multiple Channels • PXI & PXIe Versions	• Multiple Modes of Operation • Full Isolation in 4 Channel Banks • PXI & PXIe Versions
Model Family	41-760	41-761	41-670 & 43-670	41-765 & 43-765
Configurations	Millivolt Source Suitable for Thermocouple Simulation		Simulation of Linear & Rotary Differential Transformers & Resolvers	4–20 mA, 0-24 mA, +/-24 mA Current Loop Simulation at 0-5 V, +/-12 V & +/-5 V
Number of Channels	8, 16, 24 or 32		Up to 4 or 8	4, 8, 12 or 16
Resolution	0.7 μV, 1.7 μV & 3.3 μV resolution		16-Bit (Output)	16-Bit (Output within 1μA)
Accuracy	0.1% ±5 μV (±20 mV range), 0.1% ±10 μV (±50 mV range), 0.1% ±15 μV (±100 mV range)		–	Module Accuracy ±0.1% +Resolution
Range	±20 mV, ±50 mV & ±100 mV		300 Hz to 20 kHz	As Above
Connector Type	78-pin D-type		50-pin D-type	78-pin D-type
Width (PXI-1, PXI-hybrid)	1-Slot		1-Slot	1-Slot

FAULT INSERTION SWITCHING

	Fault Insertion Matrices						Fault Insertion Switches												Modular Breakout System
Features	• High Density Fault Insertion Breakout Matrix • Available With 2 or 3 Pin Breakout				• Power Fault Insertion Breakout Matrix		• High Density	• High Power • Solid State Switching • High Inrush Current Rating	• High Power • Electro-mechanical Switching		• 1 A - For Avionics /Automotive Applications	• 5 A - For Avionics /Automotive Applications	• 2 A • High Density • Low Cost	• 5 A • High Density • Low Cost	• 10 A • High Density	• Differential • Suitable for CAN, FlexRay	• High Bandwidth • Suitable for Ethernet AFDX & BroadR-Reach	• High Density Low Cost • Suitable for Avionics or Automotive Test	• 1000/100Base-T1 • ECU Test	• 1000/100Base-T1 • 700 MHz Differential	Breakout Box & Fault Insertion Unit • Modular patch panel optimized for fault insertion • Designed to work with various chassis and specific Pickering FIU modules • Many options for different current and/or voltage requirements • Customized versions available to match specific requirements
Model Family	40-592A				40-595A		40-190B	40-191B	40-192A		40-193A	40-194A	40-195	40-196	40-197A	40-198	40-199	40-201	40-202	40-203	40-204
Configurations	Dual 31x4 to Dual 124x4 Fault Matrix, 2 Pin Breakout	Dual 31x4 to Dual 248x4 Fault Matrix, 2 Pin Breakout	Dual 20x4 to Dual 80x4 Fault Matrix, 3 Pin Breakout	Dual 20x4 to Dual 160x4 Fault Matrix, 3 Pin Breakout	Dual 16x2 to Dual 30x2 Fault Matrix, 3-Pin Breakout		74, 64 or 32 Channels, 1 or 2 Fault Bus (4 or 8 Fault Input)	6 Signal Channels, 2 Fault Buses (2 Fault Inputs)	7 Signal Channels, 1 or 2 Fault Buses (1 or 2 Fault Input)		22 or 11 Signal Channels, 8 or 4 Fault Inputs	10 or 5 Signal Channel Pairs, 10 or 5 Fault Inputs	34 or 16 Signal Channels, 4 Fault Buses (8 Fault Inputs)	20 Signal Channels, 1 or 2 Fault Buses (3 or 6 Fault Input)	10 Signal Channels, 1 or 2 Fault Buses (1 or 2 Fault Input)	4 or 8 Pair Differential, 4 Fault Buses (8 Fault Inputs)	4 or 8 Pair Differential, 2 Fault Buses (4 Fault Inputs)	22 or 11 Signal Channel Pairs, 22 or 11 Fault Inputs	3 or 6 pairs of two wire connections designed for use on differential serial interfaces	1 or 2 pairs of two wire connections designed for use on differential serial interfaces inc MUX
Relay Type	Pickering Instrumentation Reed				Electro-mechanical		Electro-mechanical	Solid State	Electro-mechanical											Reed Relay	Electro-mechanical
Max Switch Voltage	150 VDC/100 VAC				125 VDC/250 VAC		165 VDC/115 VAC	±40 VDC/AC pk	±200 VDC/AC pk		16 VDC		150 VDC/100 VAC	110 VDC/100 VAC	300 VDC/250 VAC	110 VDC/250 VAC	125 VDC/250 VAC	100 V		150 VDC/100 VAC	200V
Max Switch/Carry Current	1 A/1.2 A				10 A(matrix) 8 A(breakout)		2 A	40 A	10 A		20 A		1 A	5 A	2 A	5 A	10 A	0.3 A (2 A Fault Bus)		2 A	0.5 A (Hot Switch), 0.8 A (Carry)
Max Switch Power	20 W				300 W/2500 VA		60 W	1600 W	2000 W		280 W		60 W	150 W/500 VA	60 W	150 W/1250 VA	300 W/2500 VA	30 W (60 W Fault Bus)		60 W	
Typical Operate Time	0.5 ms				10 ms		3 ms	250 μs	70 μs	10 ms	25 ms		3 ms	10 ms	3 ms	10 ms		3 ms		0.5 ms	3 ms
Connector Type	78-pin D-type				37-pin D-type		160-pin DIN 41612	8-pin Power D-type			96-pin Micro-D	50-pin D-type	78-pin D-type	50-pin D-type	20-pin GMCT & 3-pin Power D-type		78-pin D-type		160-pin DIN 41612		MMCX
Width (PXI-1, PXI-hybrid)	4-Slot	8-Slot	4-Slot	8-Slot	8-Slot		1-Slot	2-Slot								1-Slot					

Pickering - PXI Instrumentation

PXI Simulation & Instrumentation Modules

- Programmable Resistors
- Resistive Sensor Simulators
- Battery Simulators
- Switch Simulators
- Sensor/Transducer Simulators
- Fault Insertion Switching
- Chassis & Remote Controllers
- Amplifiers & Attenuators
- Signal Generation
- Digital I/O & Prototyping
- USB
- Power Supplies
- Low Voltage/Current Sources
- Connectivity

PXI FROM PICKERING INTERFACES

At Pickering, we understand that to design, deploy and sustain your test system can be challenging, and we believe in offering you the products and services to help your engineering team get the job done on time and on budget. Switching and simulation are our core competencies, and we continually expand our range of **PXI, PXIe, LXI, USB & PCI** switching and simulation products. Features include:

- All module and cable manufacturing processes take place on flexible manufacturing lines, allowing complete product control and product longevity (typically **15-20** years)
- All products manufactured by us come with a **standard 3-year warranty** and include guaranteed long-term support
- When our product range doesn't fit your application, we have the agility and expertise to develop a system to your specifications
- Full range of supporting cable and connector solutions
- Software drivers and application software packages:
  - We provide driver packages for LXI and PXI products offering seamless installation and support of all popular Programming languages such as C/C++, LabVIEW™, LabVIEW RT, .NET, VB, LabWindows/CVI, MATLAB®, Python, ATEasy, TestStand™, Veristand™ and Switch Executive™ (via the IVI driver). Our drivers use a common General Soft Front Panel with dedicated views for all of our products. Our software application packages include Diagnostic Test Tools, Switch Path Manager™ signal routing software, Sequence Manager, Cable Design Tool and PXI & LXI simulation tools. Learn more at **pickeringtest.com/software**.
- We are a Sponsor Member of the PXI Systems Alliance

Pickering is the only PXI switch provider with in-house reed relay manufacturing capability. These instrument grade reed relays feature **SoftCenter™** technology, ensuring long service life and repeatable contact performance (for further information visit **pickeringrelay.com**). In addition, most of our switch modules use through-hole technology relays (as opposed to surface mount) allowing easy replacement without the need for special tools.

Also from Pickering, the Ultra-High-Density **4mm²** reed relay product line. These relays stack on a 4 mm x 4 mm pitch, allowing the highest packing density currently available in the industry, ideal for high-density matrices and multiplexers.

Series 120 | Series 122 | Series 124
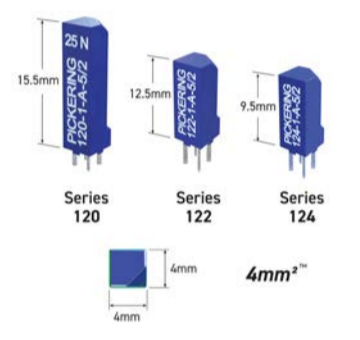
CHASSIS & REMOTE CONTROLLERS

	PXI Chassis				PXI Controllers		PXI/PXIe Hybrid Chassis			PXIe Controllers		LXI Ethernet/USB Chassis				
Chassis Slots	8-Slot	19-Slot	8-Slot	14-Slot	–	8-Slot	18-Slot	21-Slot	–	–	2-Slot	4-Slot	6-Slot	7-Slot	18-Slot
Features	• High Performance Chassis • Remote Management System	• High Performance Chassis • Remote Management System	• 6 Mechanical Expansion Slots for Efficient Housing of Wide Modules e.g. BRIC	• High Performance Chassis • Hot Swappable PSUs	• PCIe to PXI Control Interface Kit • Provides a PCI Express Interface	• Gen3 High Performance Chassis • Remote Management System	• Gen2 & Gen3 High Performance Chassis • Remote Management System	• Gen2 High Performance Chassis • 20 PXIe Hybrid Peripheral Slots • Very High Power and Cooling Capacity	• PXIe Embedded Controller • Max Throughput 14GB/s • Compact for Versatility	• PCIe to PXIe Control Interface Kit • Daisy Chain Option	• Compact chassis for hosting Pickering's 3U PXI modules in an LXI environment, allowing remote control over an Ethernet or USB connection				
Model Family	40-924	40-923A	40-908	40-914	41-924/51-924	42-924	42-925/42926	42-927	43-920	43-921-001/002 and Kits	60-104	60-105	60-106	60-102D	60-103D

Choosing a Chassis for Pickering PXI Modules

(Please note the chassis slot width for all required modules when selecting a chassis)

Chassis Selection Guide:

PXI and PXIe (with PXIe and/or Hybrid Slots)
- Mix our 1000+ PXI Switching & Simulation modules with any vendors' PXI/PXIe instrumentation
- Embedded or remote Windows PC control
- Real-time operating system support
- High data bandwidths, especially with PXI Express
- Integrated module timing and synchronization

Pickering LXI or LXI/USB Modular Chassis (Only accept our PXI Switching & Simulation Modules):
- Choose from 1000+ Pickering PXI modules
- Ethernet or USB control enables remote operation
- Low-cost control from practically any controller
- LXI provides manual control via Web browsers
- Driverless software support

- Power sequencing immunity
- Ethernet provides chassis/controller voltage isolation
- Independence from Windows operating system

3U PXI modules are compatible with the following chassis types:
- All chassis conforming to the 3U PXI and 3U Compact PCI (cPCI) specification
- Legacy and hybrid peripheral slots in a 3U PXI Express (PXIe) chassis
- Pickering Interfaces LXI or LXI/USB modular chassis

3U PXIe versions of the modules are compatible with the following chassis types:
- All chassis conforming to the 3U PXIe specification
- PXIe and hybrid peripheral slots in a 3U PXI Express (PXIe) chassis

Pickering's **PXI Simulation & Instrumentation Map** provides a reference to our range of **PXI** and **PXIe** **Simulation & Instrumentation modules**, including their basic specifications and cabling options.

For information on our range of **1000+** Switching products, please see our **PXI Switching** Map.

For information on our range of connection solutions, please see our **Cables & Connectors** Map.

pickeringtest.com 2023

AMPLIFIERS & ATTENUATORS

	Attenuators				Amplifiers
Features	• Long Service Life & Fast Operation	• High Linearity & True DC Coupling	• 600 V input rating		• Up to 60 V peak-to-peak output
Model Family	41-182B	41-180	41-660	41-661	41-650
Configurations	Solid State Programmable RF Attenuator	Programmable RF Attenuator	High Voltage Attenuator		High Voltage Amplifier
Number of Channels	3 or 6	1 or 2	10 (single ended)	5 (differential)	Up to 5 (600 Ω & 10 kΩ input impedance options)
Frequency Range	10 MHz to 6 GHz	DC to 3GHz	DC to 20kHz		DC to 120 kHz
Maximum Attenuation	31.75 dB per channel	63 dB per channel	160 times per channel		–
Maximum Gain	–				20 times
Connector Type	SMA		50-pin D-type		25-pin D-type or SMB
Width (PXI-1, PXI-hybrid)	1 or 2-Slot		1-Slot		1-Slot

SIGNAL GENERATION

	Function Generator
Features	• Simple Generation of Repetitive Arbitrary Waveforms
Model Family	41-620A
Capability	Amplitude Modulation, Edge or Level Triggering, Settable DC Offset, Frequency Sweep
Number of Channels	3
Frequency Range	DC to 10 MHz
Frequency Resolution	48-Bit
Clock Source	10 MHz PXI clock or external clock
Connector Type	SMB
Width (PXI-1, PXI-hybrid)	1-Slot

DIGITAL I/O

	Digital I/O Modules						
Features	• 32 channel I/O • Suitable for Driving Logic or Relay Coils	• 64ch Driver • Internal or External Relay Supply	• 32 channel I/O • Programmable Threshold	• 32 channel I/O • 2 A Output Drivers • Programmable Threshold	• 64 channel I/O • Semi-Dynamic 8-bit Pattern Acquistion/Generation	• Opto Isolation • Suitable for Industrial Automation Applications	
Model Family	40-410	40-411	40-412	40-413	40-419	40-490	40-491
Configurations	Digital Input/Output Module	Relay Driver Module	Digital Input/Output Module With Programmable Threshold		Digital I/O Module with 16, 32, 48 or 64 channels in ports of 8	Optically Isolated Digital I/O With or Without On Board DC-DC Converter	
Number of I/P Channels	32	—	32		64	16	
Input Channel Type	TTL	—	0.3 V to 50 V Threshold		VIH min: 2.0 V VIL max: 1.5 V	6 V Threshold	TTL
Number of O/P Channels	32	64	32		64	32	
Output Channel Type	TTL or OpenCollector	60V Drive Capability. Up to 1 A per Channel	High or Low-Side Drivers (0.4 A source, 0.5 A sink)	High or Low-Side Drivers (2 A source, 2 A sink)	Open-Drain Outputs (Low side Driver)	High Side FET Switch +40V Maximum Voltage up to 400 mA per Channel	
Connector Type	96-pin Micro-D		78-pin D-type		160-pin DIN 41612	68-pin Micro-D	
Width (PXI-1, PXI-hybrid)	1-Slot						

PROTOTYPING

	Prototyping Modules		
Features	• 65 cm² (10 in²) of 0.1" Grid Prototyping Area • With or Without Digital I/O		• Breadboard With Digital I/O & Power Distribution
Model Family	40-220A	40-225A	40-228
Configurations	Breadboard With Digital I/O	Breadboard Without Digital I/O	With or Without On Board DC-DC Converter
Number of I/P Channels	32	—	32
Input Channel Type	TTL	—	TTL
Number of O/P Channels	32	—	32
Output Channel Type	TTL	—	TTL, Low Voltage TTL or Open Collector
Connector Type	9, 15, 25, 37, 50, 78-pin D-type, 96-pin Micro-D, 20-pin GMCT		50-pin D-type
Width (PXI-1, PXI-hybrid)	1 or 2-Slot		1-Slot

USB

	USB Hub
Features	• 8-Port USB Hub • Stream Data From Backplane
Model Family	40-738 / 42-738A
Configurations	USB 2.0 Hub with Programmable Connect/Disconnect for USB Power and Data
Relay Type	Solid State
Max Switch Voltage	—
Max Switch/Carry Current	0.5 A
Max Switch Power	2.5 W
Typical Operate Time	—
Connector Type	USB Type A
Width (PXI-1, PXI-hybrid)	1-Slot

POWER SUPPLIES

	Power Supplies			
Features	• Dual Positive Outputs • Non-Isolated	• Dual Negative Outputs • Non-Isolated	• Dual 0-48 V Outputs • Fully Isolated	• High Accuracy & Low Noise • Remote Sense
Model Family	41-735	41-736	41-740	41-743
Configurations	Programmable Voltage Power Supply		Isolated Programmable Power Supply	
Number of Channels	2			1
Input Voltage	+12 V from backplane or external supply	-12 V from backplane or external supply	+56 VDC	+5 V from two PXI backplane slots
Output Voltage	Adjustable 0 to +10V	Adjustable 0 to -10V	Adjustable 0 to 48 V	
Max Current	1 A per Channel		2 A per Channel	2 A (up to 20 V)
Connector Type	25-pin D-type		Screw Terminal Block	
Width (PXI-1, PXI-hybrid)	1-Slot			2-Slot

LOW VOLTAGE/CURRENT SOURCES

	Low Voltage Source	Low Current/Voltage Source
Features	• Millivolt Source • Independently Isolated Channels	• Multiple Modes of Operation • Full Isolation in 4 Channel Banks • PXI & PXIe Versions
Model Family	41-761	41-765 & 43-765
Configurations	Millivolt Source Suitable for Thermocouple Simulation	4–20 mA, 0-24 mA, +/-24 mA Current Loop Simulation at 0-5 V, +/-12 V & +/-5 V
Number of Channels	8, 16, 24 or 32	4, 8, 12 or 16
Resolution	0.7 μV, 1.7 μV & 3.3 μV resolution	16-Bit (Output within 1 μA)
Accuracy	0.1% ±5 μV (±20 mV range), 0.1% ±10 μV (±50 mV range), 0.1% ±15 μV (±100 mV range)	Module Accuracy ±0.1% +Resolution
Range	±20 mV, ±50 mV & ±100 mV	As Above
Connector Type	78-pin D-type	78-pin D-type
Width (PXI-1, PXI-hybrid)	1-Slot	1-Slot

CONNECTIVITY

Cables & Connectors

To support our products we offer a comprehensive range of cable & connector solutions:
- 20+ connector product families
- Over 1000 individual products
- Customized cabling

For more information visit: **pickeringtest.com/cables-connectors**

Connectors & Backshells

Multiway Cable Assemblies

RF Cable Assemblies

Cable Design Tool

Our Cable Design Tool is a free online tool that allows you to define a cable assembly to exactly meet your requirements.
- Graphical design of customized cable assemblies
- Built-in library of standard cable sets can be used as the basis for customization, or cables can be defined from scratch
- The ability to store cable assemblies in the Cloud and develop them over time
- Each cable design has a PDF documentation file detailing all the specifications
- Allows detailed design including; connector types, wire type, pin definitions, pin & cable labelling, cable bundling, length selection, sleeving, comments, etc.
- Add your own connectors and wires
- Fully supported on major tablet operating systems

For more information visit: **pickeringtest.com/cdt**

Mass Interconnect

We recommend the use of a mass interconnect solution when an Interchangeable Test Adapter (ITA) is required to be used with a PXI based test system. The complete range of our PXI modules are fully supported by both VPC and MacPanel mass interconnect solutions.

See **Mass Interconnect.**

VPC Virginia Panel Corporation www.vpc.com

DIN Rail Mounted Connector Blocks

MAC-PANEL www.macpanel.com

Module Mounted Connector Blocks

About Pickering Interfaces

Pickering Interfaces was formed in 1988 and is headquartered in Clacton-on-Sea, United Kingdom. We have two manufacturing facilities—in the UK and the Czech Republic. We also have direct sales and support offices throughout Asia, Europe and North America. Our employees share a customer-centric approach and are dedicated to quickly getting our products functioning at their peak and into our customers' hands.

Today, we offer modular signal switching, simulation, software and services to streamline the development and deployment of high-performance electronic test and verification systems. We provide the most extensive range of switching and simulation solutions in the industry for PXI, LXI, USB and PCI applications. To support our switching and simulation solutions, we also offer application software and software drivers along with a full range of supporting connectivity and cabling solutions.

PXI / PXIe Pickering is committed to supporting both the **PXI** and **PXI Express (PXIe)** standards and will supply all new modules in both formats whenever possible. We also have an active program to replicate existing PXI modules in **PXIe** and already have several hundred **PXIe** modules available. Modules that are available in both formats are identified on this map by the **PXI/PXIe** icon.

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