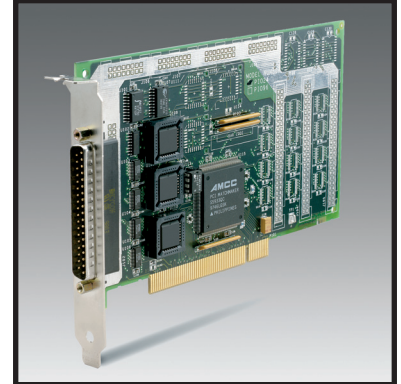
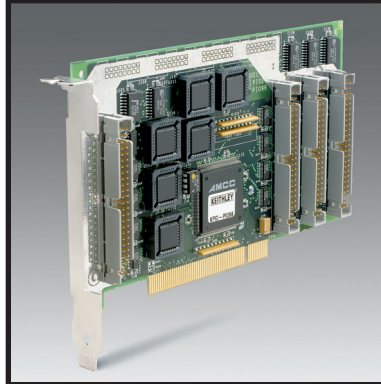


# KPCI-3160 KPCI-PIO96 KPCI-PIO24

## 96/24-Line Parallel Digital I/O Boards



- 96 or 24 TTL-level compatible digital I/O lines
- Bi-directional I/O
- High-current driver capability, 15mA (source) and 64mA (sink)
- Compatible with ERB-24, SSIO-24, and PB-24SM accessories
- Compatible with industry standard solid-state relays
- 32-bit DriverLINX drivers plus a suite of bundled software including ExceLINX, VisualSCOPE, TestPoint, and LabVIEW drivers

### Functional Description

These parallel digital I/O boards offer a wide range of functionality for applications as diverse as digital I/O and process control to prototyping and parallel communications. They provide 96 or 24 TTL-level digital I/O lines that can be used for digital control of processes and monitoring of the status of switches, contacts, or other control points. All digital I/O lines can be accessed simultaneously by the hardware and software. These lines also provide high-current driver outputs for sinking (64mA) and sourcing (15mA). This allows them to drive relays directly without any interface circuitry.

The digital I/O lines of the KPCI-3160 and KPCI-PIO96 are divided into four 24-bit groups, each of which is further divided into 3 separate 8-bit ports (PA, PB, and PC). These ports can be set independently under software control as inputs or outputs. In addition to operating as a standard 8-bit data port, the third port (PC) can be subdivided into 2 half ports of 4 bits each. The PA, PB, and PC ports can always be read/write accessed, regardless of their initial configuration, without affecting external signal levels. All ports default as inputs upon initial power-up or reset conditions. The KPCI-3160 has a high-output current of 15mA (source) and 64mA (sink), enabling direct control of LEDs, solid-state I/O modules, and relays.

The KPCI-PIO24's 24 digital I/O lines are grouped into three separate 8-bit ports (PA, PB, and PC), which can be set independently under software control as inputs or outputs. In addition to operating as a standard 8-bit data port, the third port (PC) can be subdivided into two half ports of 4 bits apiece. The PA, PB, and PC ports can always be read/write accessed, regardless of their initial configuration, without affecting external signal levels. All ports default as inputs upon initial power-up or reset conditions.

	KPCI-3160	KPCI-PIO96	KPCI-PIO24
Number of Channels	96	96	24
Sink	64 mA	64 mA	64 mA
Source	-15 mA	-15 mA	-15 mA
Interrupt Capability	Yes, configurable	No	Yes, configurable
Connector Type	100 pin	4 x 50 pin	37 pin D type
CE Compliant	Yes	No	Yes

### Ordering Information

- KPCI-3160**  
96-Channel, PCI-Bus,  
Parallel Digital I/O Board,  
CE Compliant
- KPCI-PIO96**  
PCI bus 96-bit Parallel  
Digital I/O Board
- KPCI-PIO24**  
PCI bus 24-bit Parallel  
Digital I/O Board



### APPLICATIONS

- Factory automation
- Monitoring the status of switches, push buttons, limit switches, etc.
- Laboratory automation
- Production test
- Energy management
- Security systems

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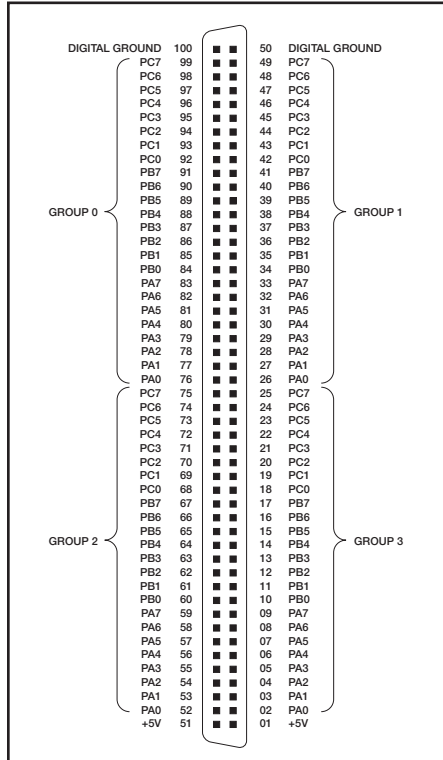
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# KPCI-3160 KPCI-PIO96 KPCI-PIO24

## Connector Pin Assignments for KPCI-3160

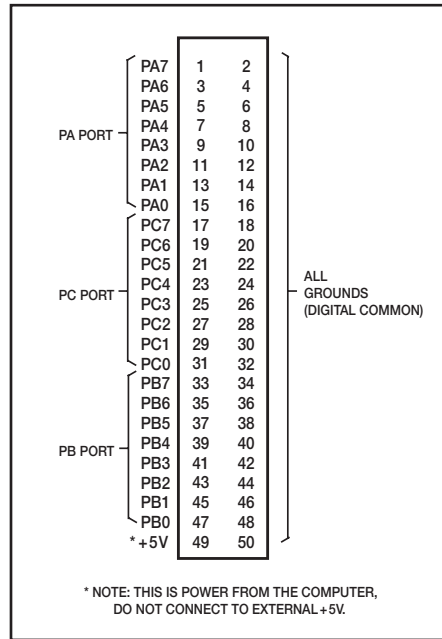
The digital input and output connections are made with a 100-pin connector.



# 96/24-Line Parallel Digital I/O Boards

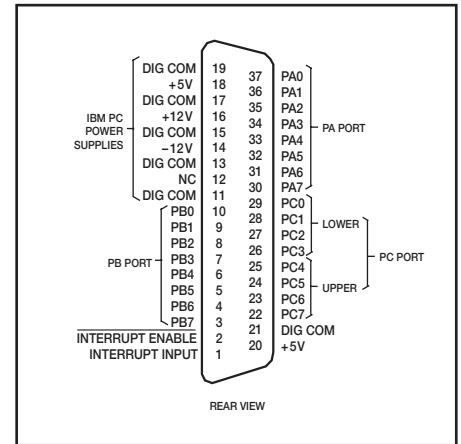
## Connector Pin Assignments for KPCI-PIO96

All connections are made through four 50-pin board-mounted header connectors. These typically connect to the CACC-2000 cable when interfacing to STP-50, STA-50, ERB-24, or SSIO-24 assemblies.

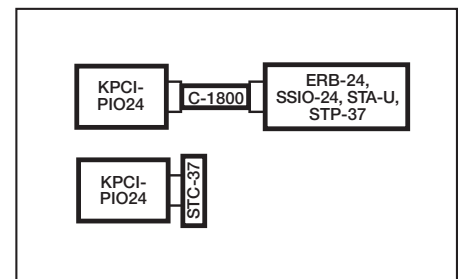


## Connector Pin Assignments for KPCI-PIO24

All connections are made through a standard 37-pin D-type male connector that projects through the rear panel of the computer. For soldered connections, a standard 37-pin D female connector is the correct mating part, and can be ordered from Keithley as part number SFC-37.



## Configuration Guide for KPCI-PIO24



Simultaneously access all digital I/O lines

PCI/ISA/PCMCIA

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# KPCI-3160 KPCI-PIO96 KPCI-PIO24

## 96/24-Line Parallel Digital I/O Boards

### Specifications

Symbol	Parameter	Min.	Typ.	Max.	Unit
<b>Logic Inputs and Outputs</b>					
$V_{IH}$	Voltage, input high	2.0	—	—	V
$V_{IL}$	Voltage, input low	—	—	0.8	V
$I_{IH}$	Current, input high, $V_{IN} = 2.7V$	—	—	$\pm 1$	$\mu A$
$I_{IL}$	Current, input low, $V_{IN} = 0.5V$	—	—	$\pm 1$	$\mu A$
$I_{OZH}$	High impedance output current, $V_{OUT}$ high	—	—	$\pm 1$	$\mu A$
$I_{OZL}$	High impedance output current, $V_{OUT}$ low	—	—	$\pm 1$	$\mu A$
$V_{OH}$	Voltage, output high, $I_{OH} = -8mA$	2.4	3.3	—	V
$V_{OL}$	Voltage, output low, $I_{OL} = 64mA$	—	0.3	0.55	V
$I_{OH}$	Current, output high	—	—	64.0	mA
$I_{OL}$	Current, output low	—	—	-15	mA
$I_{OS}$	Short circuit current	-60.0	-120.0	-225.0	mA
$I_{OFF}$	Input/output power off leakage	—	—	$\pm 1$	$\mu A$

### Environmental

Operating temperature range	0	+50	°C
Storage temperature range	-40 <sup>1</sup>	+100 <sup>2</sup>	°C
Humidity (non condensing)	0	90	%

### Dimension

5 × 4.25 × 0.75 (half slot)	inches
12.7 × 10.8 × 1.9	cm

### Weight

4.4 (4 for KPCI-PIO24)	oz
125 (116 for KPCI-PIO24)	grams

1 -20 for KPCI-PIO24.

2 +85 for KPCI-PIO96 and KPCI-PIO24.

### ACCESSORIES AVAILABLE (KPCI-3160)

CAB-1800/S	100-conductor shielded cable with a 100-pin D-type connector on each end. 18 in length. Longer and non-shielded cables are also available
CAB-SSR	3 ft ribbon cable with card-edge connector for PB-24 and PB-24SM
CACC-2000	Cable, 24 in, 50 conductor. Interfaces CONN-3160-D1 to STA-50, STP-50, ERB-24, or SSIO-24
CONN-3160-D1	Adapter accessory for the KPCI-3160
ERB-24	24-channel DPDT relay output board. Requires CACC-2000 cable
PB-24SM	24-channel baseboard for SM Series SSR modules
SSIO-24	24-channel solid-state I/O module board. Requires CACC-2000 cable
STA-50	Universal 50-pin screw terminal board. Requires CACC-2000 cable
STP-50	Screw Terminal panel with 50-pin male header. Requires CACC-2000 cable
STP-100U	100-pin universal screw terminal panel
STP-ENCL	General purpose enclosure for STP-37, STP-37/E, and STP-50
TESTPOINT	TestPoint software package

### ACCESSORIES AVAILABLE (KPCI-PIO96)

C1800	18-inch ribbon cable
CAB-SSR	3 ft ribbon cable with card-edge connector for PB-24 and PB-24SM
CACC-2000	KPCI-PIO96 to STA-50, STP-50, ERB-24, or SSIO-24 cable (24 in)
ERB-24	8-channel SPDT relay output accessory
PB-24SM	24-channel baseboard for SM Series SSR modules
SSIO-24	24-channel solid-state I/O module board
STA-50	Universal 50-pin screw terminal board
STP-50	Screw terminal panel with 50-pin male header
TESTPOINT	TestPoint application software on CD-ROM

### ACCESSORIES AVAILABLE (KPCI-PIO24)

C1800	18-inch ribbon cable
ERB-24	24-channel DPDT relay output board
S1800	18-inch shielded ribbon cable
SSIO-24	24-channel solid-state I/O module board
STA-U	Universal screw terminal assembly
STC-37	Direct screw terminal connector
STP-37	Screw terminal panel
TESTPOINT	TestPoint application software on CD-ROM

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