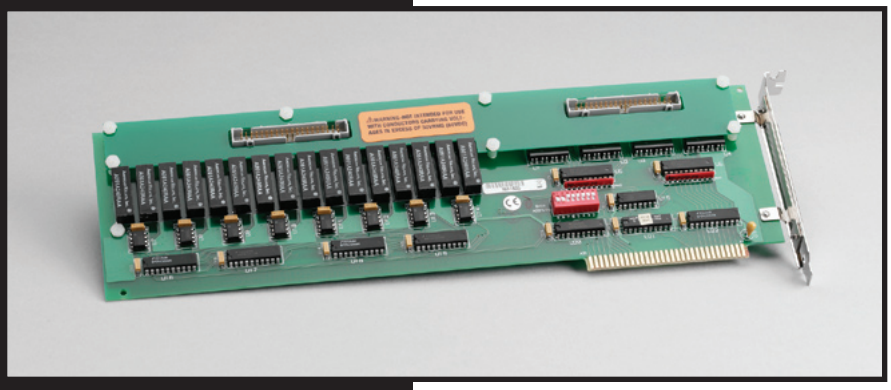
32 channels of isolated digital I/O

PIO-32I/O

32-Channel Isolated Digital I/O Board



- **Opto-isolated inputs accept control voltage up to 28VDC**
- **Relay outputs rated 10W max. at 0.5A or at 30V rms (resistive)**
- **Onboard shields prevent contact with user voltages**
- **High density—requires only one slot inside the PC**
- **All connections through onboard ribbon headers**
- **Programmed like two PIO-12s (emulates PA and PB of 8255 Mode 0)**
- **Lower cost than SSR modules**
- **32-bit DriverLINX® drivers plus a suite of bundled software including ExceLINX™, VisualSCOPE™, and LabVIEW® drivers**

Ordering Information

PIO-32I/O	**Isolated 16-Channel Digital Input and 16-Channel Relay Output Board**

Functional Description

Keithley's PIO-32I/O board provides 32 channels of isolated digital I/O on a single board that plugs directly into any available I/O slot of any ISA-bus compatible computer. The PIO32I/O provides 16 channels of optically isolated digital input and 16 channels of electromechanical relay output. All inputs and outputs are isolated to eliminate ground loops, which can cause measurement errors. Onboard safety shields protect the user from inadvertently touching conductors that can have potentially hazardous voltages.

The isolated digital inputs of the PIO-32I/O can be driven by control voltages of 3.5 to 28VDC. Additional resistance can be added externally to extend the input voltage range. Response time of the inputs is typically 0.33ms.

The digital outputs of the PIO-32I/O are implemented with electromechanical reed relays. The relays are configured as Form A (SPST–normally open) contacts. The contacts can switch up to 10 watts max. at 0.5A or 30V rms into a resistive load. Operation time of each relay is typically 1ms. The current state of the relays (on/off) can be determined by reading back the data from the I/O ports.

up & running software

All connections to the PIO-32I/O board are made through two onboard 40-pin ribbon headers. The optional C-3200 ribbon cable and STP-37/FC Screw Terminal Panel accessory provide a convenient means for wiring to your application. The STP-37/FC uses a 37-pin D-type female connector to prevent high user voltages from being exposed when the cable is unplugged. The STP-37/FC is encased in a high-impact plastic base convenient for desktop use, or it can be easily mounted on standard DIN rails or via screws. Two cables and two screw terminal panels should be used to support the full 32-channel capability of a PIO-32I/O board. However, one cable and one STP can be used if only 16 channels of a similar type (input or output) are required.

ACCESSORIES AVAILABLE

C-3200*	PIO-32I/O Board to STP-37/FC Cable
STP-37/FC*	Screw Terminal Panel with female D37

*Two of each required to support 32-channel capability.

APPLICATIONS

- **Factory automation**
- **Monitoring of proximity switches, thermostats, push buttons, limit switches, etc.**
- **Switching of solenoids, lamps, heaters, motor controls, etc.**
- **Laboratory automation**
- **Production test**
- **Process monitoring/control**
- **Energy management**
- **Security systems**

DATA ACQUISITION PRODUCTS

1.888.KEITHLEY (U.S. only)

www.keithley.com

KEITHLEY

PIO-32I/O 32-Channel Isolated Digital I/O Board

Specifications

CONTROL INPUTS

QUANTITY: 16.
TYPE: Opto-isolator.
INPUT HIGH (MIN): 3.5VDC, 1.25mA.
INPUT HIGH (MAX): 28VDC, 15mA.
INPUT LOW: 0.8VDC or open.
INPUT RESISTANCE: 2.0kΩ, 0.5W.
RESPONSE FREQUENCY: <3kHz.

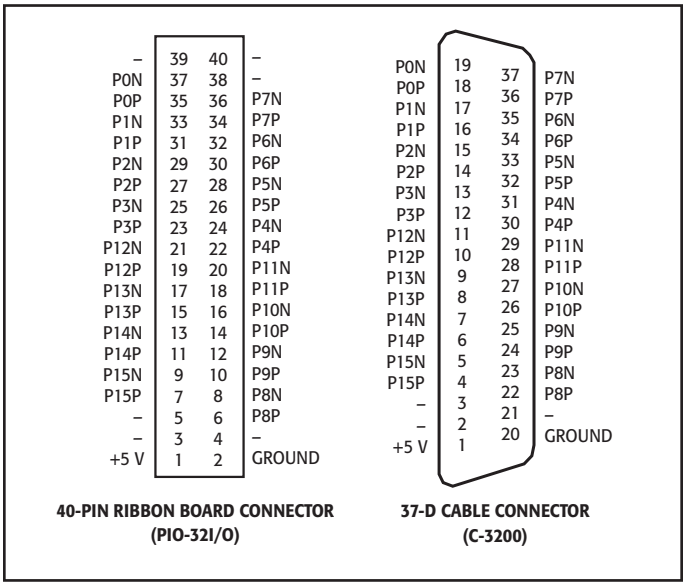
RELAY OUTPUTS

QUANTITY: 16.
CONTACT CONFIGURATION: FORM A (SPST–normally open).
CONTACT TYPE: Dry.
CONTACT RATING: 10W max. at 0.5A or 30V rms, 42.4V peak. 60VDC (resistive load).
CONTACT RESISTANCE: 100mΩ max initial.
OPERATION TIME: 1ms max. including bounce.
RELEASE TIME: 1ms max.
MECHANICAL LIFE: 10^9 operations.
ELECTRICAL LIFE: 10^7 operations at rated load.

ENVIRONMENTAL

OPERATING TEMPERATURE: 0 to 50°C.
STORAGE TEMPERATURE: –20 to +70°C.
HUMIDITY: 0 to 90%, non-condensing.
EMC: Conforms to European Union Directive 89/336/EEC.
SAFETY: IEC Installation Category I. (Voltage source must be isolated from the mains by a transformer.)
DIMENSIONS: 13.3 in L × 4.25 in H × 0.75 in D (33.8cm × 10.8cm × 1.9cm).
WEIGHT: 10 oz.

Connector Pin Assignments

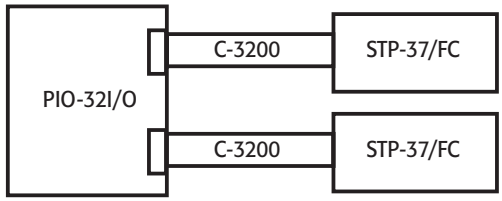


40-PIN RIBBON BOARD CONNECTOR (PIO-32I/O)

37-D CABLE CONNECTOR (C-3200)

For pin assignments of channels 16-31, add sixteen to the channel numbers shown, (i.e. P0N becomes P16N, etc.)

Configuration Guide



PIO-32I/O specifications

DATA ACQUISITION PRODUCTS