

USER GUIDE

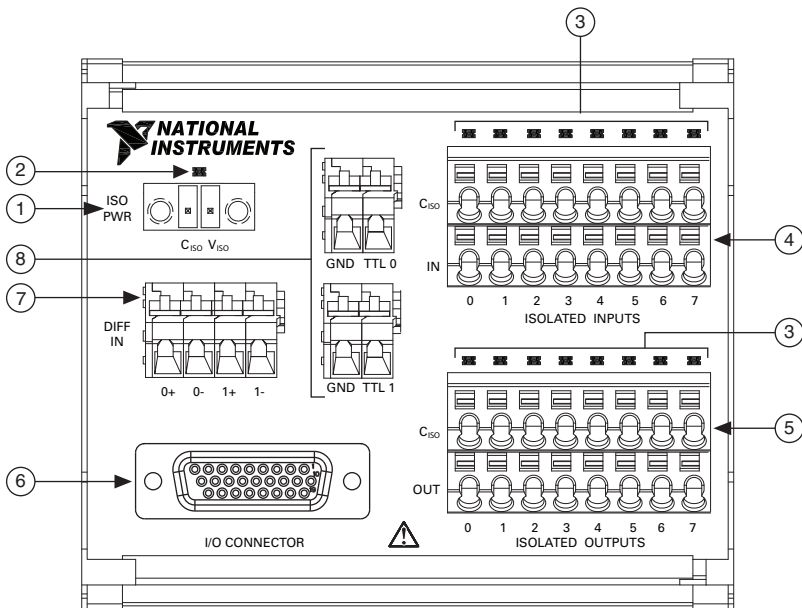
I/O Accessory

For the NI PCIe-8237R GigE Vision Interface Device

The I/O Accessory for NI PCIe-8237R GigE Vision Interface Device (I/O Accessory) is a terminal block that simplifies power and I/O signal configuration for the NI PCIe-8237R (NI 8237R).

This document describes features, what you need to get started, and installation and operation instructions for the I/O Accessory.

Figure 1. I/O Accessory for NI PCIe-8237R GigE Vision Interface Device



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| <ul style="list-style-type: none"> 1 ISO PWR input supplies power to the isolated outputs 2 Power status LED illuminates to indicate power through the ISO PWR connector 3 Isolated input/output LEDs illuminate to indicate an I/O channel is on | <ul style="list-style-type: none"> 4 Isolated input connectors 5 Isolated output connectors 6 26-Pin Digital I/O D-SUB connector to NI 8237R 7 Differential input connectors 8 TTL I/O connectors |
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Features

- 26-pin D-SUB connector
- Spring terminals for each NI 8237R I/O signal
- User-replaceable fuse for the isolated output power supply (V_{ISO})
- Isolated I/O status LEDs
- Built-in DIN rail clips for easy mounting
- Compact dimensions (4.0 × 3.35 × 1.7 in., 102 × 85 × 43 mm)

What You Need to Get Started

- I/O Accessory kit, including the accessory and 26-pin D-SUB cable
- NI 8237R GigE Vision Interface Device
- 14-28 AWG Wire
- Wire cutter
- Wire insulation stripper

Related Documentation

The *NI PCIe-8237R User Guide and Specifications*, available from ni.com/manuals, contains additional information you may find helpful as you set up and use the I/O Accessory.

Installing the I/O Accessory

1. Install the NI 8237R per instructions in the *NI PCIe-8237R User Guide and Specifications*.
2. Connect the 26-pin D-SUB cable to the I/O connector on the I/O Accessory and the Digital I/O connector on the NI 8237R.
3. Connect signal wires to the spring terminals on the I/O Accessory:
 - a. Strip 1/4 in. of insulation from the signal wire.
 - b. Depress the lever or push the button on the spring terminal.
 - c. Insert the wire into the terminal.

Refer to the [Signal Descriptions](#) section for a description of each signal.

4. If using isolated outputs, connect a power supply to the ISO PWR connector on the I/O Accessory. Supply voltage range for V_{ISO} is 5 VDC to 30 VDC.



Caution Do not connect input voltages greater than 30 VDC to the ISO PWR or isolated inputs on the I/O Accessory. Input voltages greater than 30 VDC can damage the accessory, all devices connected to it, and the host computer. National Instruments is *not* liable for damage or injury resulting from such misuse.

Testing and Replacing the Fuse

The I/O Accessory has a replaceable fuse on the rear of the board. If this fuse is blown, replace it with a Littelfuse 0453003. The Littelfuse 0453003 is a 3 A, 125 V Very Fast-Acting Nano² subminiature ceramic surface mount fuse measuring 6.10 × 2.69 mm.

You can use a handheld DMM to verify the continuity of a fuse.

Complete the following steps to replace a blown fuse:

1. Remove all signal wires and cables from the I/O Accessory.
2. Remove a side panel. Use a Phillips head screwdriver to remove the 2 retaining screws
3. Slide the circuit board out.
4. Replace the blown fuse with an equivalent replacement fuse.

Signal Descriptions

Refer to the *NI PCIe-8237R User Guide and Specifications* for pin location and definition on the NI 8237R Digital I/O connector.

Table 1. I/O Connector Signals

Connector	Signal Name	Description
ISO PWR	C _{ISO}	Common ground reference for isolated inputs and outputs*
	V _{ISO}	External power supply for isolated outputs
TTL 0	GND	Digital ground reference for TTL and differential inputs
	TTL 0	Bidirectional TTL input/output signal 0
TTL 1	GND	Digital ground reference for TTL and differential inputs
	TTL 1	Bidirectional TTL input/output signal 1
DIFF IN	0+	RS-422 differential input 0 (positive side) or quadrature encoder phase A+
	0-	RS-422 differential input 0 (negative side) or quadrature encoder phase A-
	1+	RS-422 differential input 1(positive side) or quadrature encoder phase B+
	1-	RS-422 differential input 1(negative side) or quadrature encoder phase B-

Table 1. I/O Connector Signals (Continued)

Connector	Signal Name	Description
ISOLATED INPUTS	C _{ISO} 0 to 7	Common ground reference for isolated inputs and outputs*
	IN 0	General purpose isolated input signal 0
	IN 1	General purpose isolated input signal 1
	IN 2	General purpose isolated input signal 2
	IN 3	General purpose isolated input signal 3
	IN 4	General purpose isolated input signal 4
	IN 5	General purpose isolated input signal 5
	IN 6	General purpose isolated input signal 6
	IN 7	General purpose isolated input signal 7
ISOLATED OUTPUTS	C _{ISO} 0 to 7	Common ground reference for isolated inputs and outputs*
	OUT 0	General purpose isolated output signal 0
	OUT 1	General purpose isolated output signal 1
	OUT 2	General purpose isolated output signal 2
	OUT 3	General purpose isolated output signal 3
	OUT 4	General purpose isolated output signal 4
	OUT 5	General purpose isolated output signal 5
	OUT 6	General purpose isolated output signal 6
	OUT 7	General purpose isolated output signal 7
*All C _{ISO} signals on the I/O Accessory board are connected together.		

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