USER GUIDE

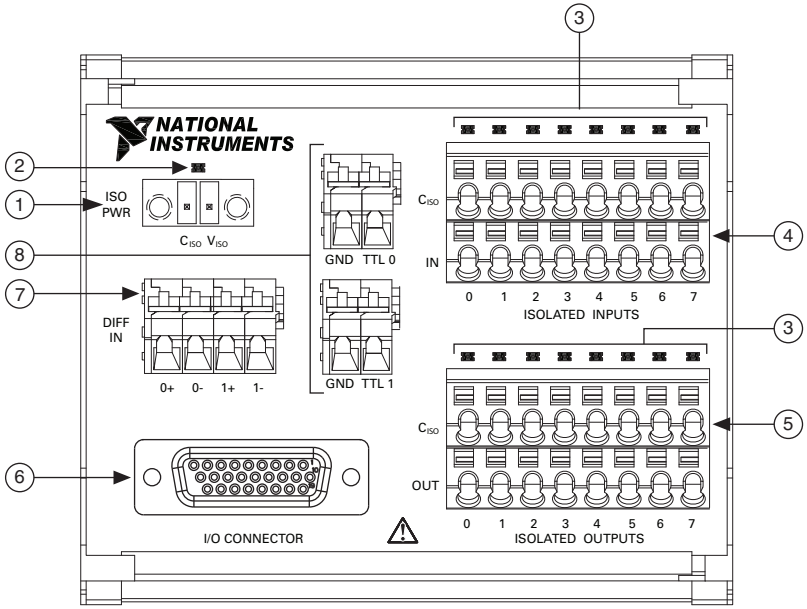
I/O Accessory

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



1	ISO PWR input supplies power to the isolated outputs	4	Isolated input connectors
2	Power status LED illuminates to indicate power through the ISO PWR connector	5	Isolated output connectors
3	Isolated input/output LEDs illuminate to indicate an I/O channel is on	6	26-Pin Digital I/O D-SUB connector to NI 8237R
		7	Differential input connectors
		8	TTL I/O connectors

NATIONAL INSTRUMENTS

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 Nano^2 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.		

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

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