NI-9403 Getting Started

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Contents

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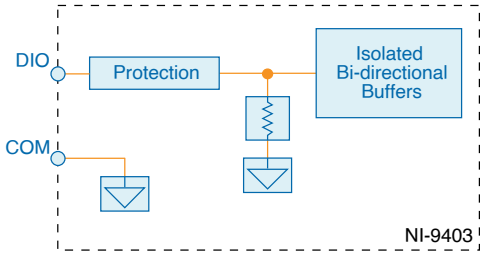
NI-9403 Block Diagram

The NI-9403 provides overvoltage, overcurrent, and short-circuit protection and isolated bi-directional buffers for each DIO channel.

Figure 1. NI-9403 Circuitry



The DIO channels have Schmitt trigger inputs and are compatible with 5 V/TTL logic devices. Each input channel has hysteresis for improved performance with noisy and non-monotonic input signals. Each channel also has a pull-down resistor.

NI-9403 Pinout

The NI-9403 provides connections for 32 digital input/output channels.

Figure 2. NI-9403 Pinout

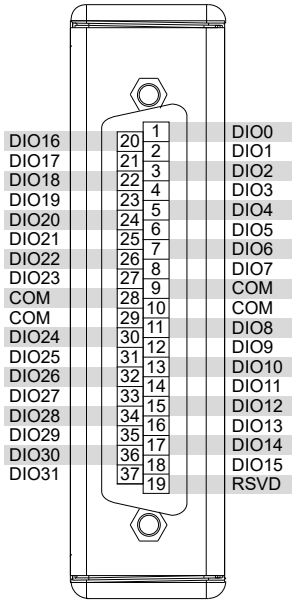


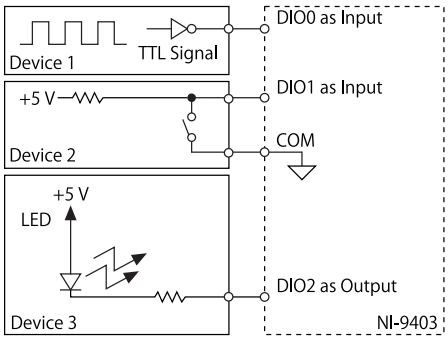
Table 1. NI-9403 Signal Descriptions

Signal Name	Description
DIO	Each channel includes a DIO pin to which you can connect a digital input or output device.
COM	DIO channels are internally referenced to COM, so you can use any of the four COM lines as a reference for the external signal.
RSVD	This channel is reserved and is not a user-facing signal.

Connecting Digital Devices to the NI-9403

You can connect digital devices to the NI-9403.

Figure 3. Connecting Digital Devices to the NI-9403



Overcurrent/Short-Circuit Protection

The overcurrent protection allows only a specified amount of current through the output channels to protect the NI-9403 from short circuits. If the NI-9403 goes into an overcurrent state, the module sets all the DIO channels to high impedance for approximately 280 ms.

When the channels are in an overcurrent state, the NI-9403 can accept new line direction configuration and output state data but cannot pass valid input data to the software.

After the overcurrent protection period, the NI-9403 automatically recovers to the latest direction configuration and output state. If the overcurrent condition still exists, the module again sets the channels to high impedance. This cycle continues until the overcurrent condition is removed.

Conformal Coating

The NI-9403 is available with conformal coating for additional protection in corrosive and condensing environments, including environments with molds and dust.

In addition to the environmental specifications listed in the ***NI-9403 Safety, Environmental, and Regulatory Information***, the NI-9403 with conformal coating meets the following specification for the device temperature range. To meet this specification, you must follow the appropriate setup requirements for condensing environments. Refer to ***Conformal Coating and NI RIO Products*** for more information about conformal coating and the setup requirements for condensing environments.

Operating humidity (IEC 60068-2-30 Test Db)	80 to 100% RH, condensing

Related information:

- Conformal Coating and NI RIO Products