NI-9266 Getting Started

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NI-9266 Nomenclature

In this article, the NI-9266 with screw terminal and NI-9266 with DSUB are referred to inclusively as the NI-9266.

NI-9266 Pinout

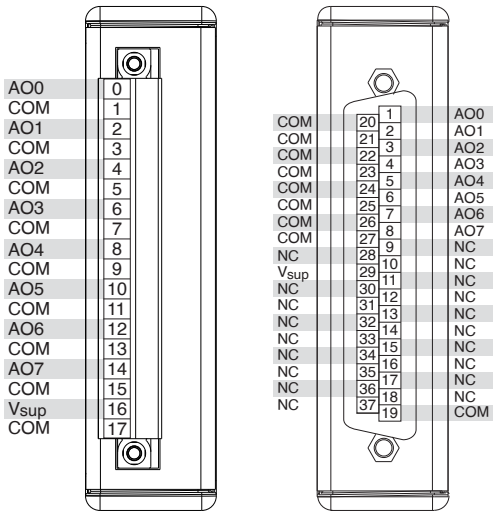
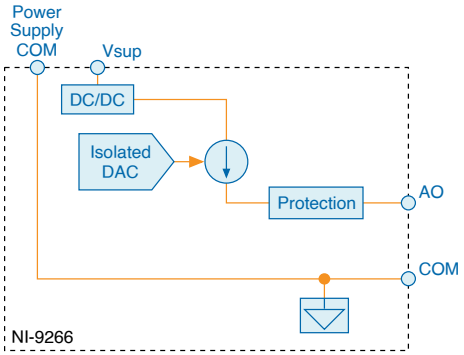


Table 1. Signal Descriptions

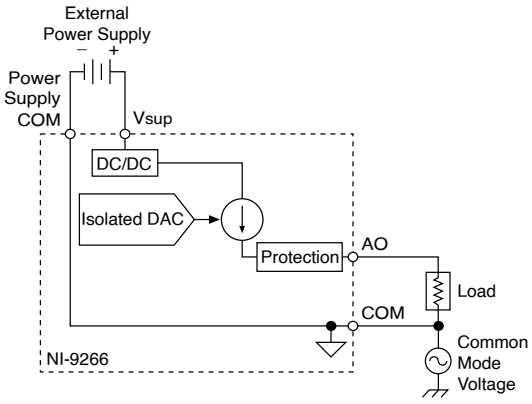
Signal	Description
AO	Analog output signal connection
COM	Common reference connection to isolated ground
NC	No connection
V_{sup}	Voltage supply connection

NI-9266 Block Diagram



- Each AO channel has a digital-to-analog converter (DAC) that produces a current signal.
- Each channel also has overvoltage and short-circuit protection.

Connecting the NI-9266



Connecting an External Power Supply

You must connect an external power supply with a 9 V DC to 30 V DC voltage range to the NI-9266. This power supply provides the current for the devices you connect to the module. You can connect only one external voltage supply to the NI-9266.

1. Connect the positive lead of the power supply to V_{sup}.
2. Connect the negative lead of the power supply to COM.

Caution Do not remove or insert modules if the external power supply connected to the V_{sup} and COM pins is powered on.

Dynamic Power Supply Control

The NI-9266 uses a technique called dynamic power supply control featuring a DC-DC converter circuit, which allows reductions in power consumption from standard designs. The NI-9266 circuitry senses the output voltage and regulates the internal DC-DC converter in order to limit the power dissipation while maintaining the necessary compliance voltage for the given load and output current. The NI-9266 has a dedicated DC-DC converter for each channel, allowing it to dynamically adjust to a specific use case.

The DC-DC converters have a slower slew rate than linear stages, so the module will respond slower to a step response than a classic linear output module, resulting in slower settling times.

Current Loop Status

The NI-9266 provides channel-based indicators for open current loop condition or if the loop is out of regulation. This could be the result of a wire disconnect or a violation of the maximum load or maximum compliance voltage. When an output channel is set to a nonzero current value, an Open Current Loop status bit corresponding to that channel can be read in software. The external power supply connected to the NI-9266 terminals is monitored for non-compliance to the voltage range shown in the Specifications section. The external power supply is part of the current loop, so a fault at the power supply terminals will also trigger the Open Current Loop status bits on all channels. The Power Supply Fault status bit can also be read in the software. Refer to the documentation for the software you are using with the NI-9266 for information about reading status indicators.

NI-9266 Connection Guidelines

- Make sure that devices you connect to the NI-9266 are compatible with the module specifications.
- You must use 2-wire ferrules to create a secure connection when connecting more

than one wire to a single terminal on the NI-9266.
- For CAT II measurements, you must use a power supply with isolated DC outputs.
- Each channel has a common terminal, COM, that is internally connected to the isolated ground reference of the module.

High-Vibration Application Connections

If your application is subject to high vibration, NI recommends that you follow these guidelines to protect connections to the NI-9266:

- Use ferrules to terminate wires to the detachable connector.
- Use the NI-9928 connector backshell kit.

Overvoltage Protection

The NI-9266 provides overvoltage protection for each channel.

Note Refer to the ***NI-9266 Specifications*** on ni.com/docs for more information about overvoltage protection.

Conformal Coating

The NI-9266 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-9266 Safety, Environmental, and Regulatory Information***, the NI-9266 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

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