
NI-9265 Getting Started

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Before You Begin

Read the **NI-9265 Safety, Environmental, and Regulatory Information** and complete the software and hardware installation procedures in your chassis documentation.

Safety Guidelines



Caution Observe all instructions and cautions in the user documentation. Using the product in a manner not specified can damage the product and compromise the built-in safety protection.



Attention Suivez toutes les instructions et respectez toutes les mises en garde de la documentation d'utilisation. L'utilisation du produit de toute autre façon que celle spécifiée risque de l'endommager et de compromettre la protection de sécurité intégrée.

Safety Voltages

Connect only voltages that are within the following limits.

Channel-to-COM or Vsup-to-COM

±40 V maximum^[1]

¹ The maximum voltage that can be applied between any channel or Vsup terminal and a COM terminal without damaging the module or other devices.

Isolation Voltages

Channel-to-channel	None
Channel-to-earth ground, Vsup-to-earth ground, or COM-to-earth ground	
Continuous	

up to 2,000 m altitude	250 V RMS, Measurement Category II
up to 5,000 m altitude	60 V DC, Measurement Category I

Withstand

up to 2,000 m altitude	2,300 V RMS, verified by a 5 s dielectric withstand test
up to 5,000 m altitude	1,000 V RMS, verified by a 5 s dielectric withstand test

Safety Guidelines for Hazardous Voltages

If hazardous voltages are connected to the product, take the following precautions. A hazardous voltage is a voltage greater than:

- 30 V RMS, 42.4 V peak, or 60 V DC in DRY LOCATIONS
- 16 V RMS, 22.6 V peak, or 35 V DC in WET LOCATIONS



Caution Ensure that hazardous voltage wiring is performed only by qualified personnel adhering to local electrical standards.



Attention S'assurer que le câblage à tension dangereuse est effectué par du personnel qualifié respectant les normes électriques locales.



Caution Do not mix hazardous voltage circuits and human-accessible circuits on the same product.



Attention Ne pas combiner des circuits avec des tensions dangereuses et des circuits accessibles aux personnes sur le même produit.



Caution When product terminals are hazardous voltage LIVE, you must ensure that devices and circuits connected to the product are properly insulated from human contact.



Attention Lorsqu'une haute tension dangereuse est appliquée aux bornes du produit, vous devez vous assurer que les appareils et les circuits auxquels il est connecté sont correctement isolés de tout contact humain.



Caution You must use the NI 9927 connector backshell kit to ensure that the terminals are not accessible.

Safety Guidelines for Hazardous Locations

The NI-9265 is suitable for use in Class I, Division 2, Groups A, B, C, D, T4 hazardous locations; Class I, Zone 2, AEx nA IIC T4 Gc and Ex nA IIC T4 Gc hazardous locations; and nonhazardous locations only. Follow these guidelines if you are installing the NI-9265 in a potentially explosive environment. Not following these guidelines may result in serious injury or death.



Caution Do not disconnect I/O-side wires or connectors unless power has been switched off or the area is known to be nonhazardous.



Caution Do not remove modules unless power has been switched off or the area is known to be nonhazardous.



Caution Substitution of components may impair suitability for Class I, Division 2, or Zone 2.



Caution The system must be installed in an enclosure certified for the intended hazardous (classified) location, having a tool secured cover/door, where a minimum protection of at least IP54 is provided.



Caution For Division 2 and Zone 2 applications, connected signals must be within the following limits.

Capacitance	80 nF max maximum
Inductance	0.2 H max maximum

Special Conditions for Hazardous Locations Use in Europe and Internationally

The NI 9265 has been evaluated as Ex nA IIC T4 Gc equipment under DEMKO 03ATEX 0324020X and is IECEx UL 14.0089X certified. Each NI 9265 is marked Ⓢ II 3G and is suitable for use in Zone 2 hazardous locations, in ambient temperatures of $-40\text{ °C} \leq T_a \leq 70\text{ °C}$. If you are using the NI 9265 in Gas Group IIC hazardous locations, you must use the device in an NI chassis that has been evaluated as Ex nC IIC T4, Ex IIC T4, Ex nA IIC T4, or Ex nL IIC T4 equipment.



Caution Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value of 85 V at the supply terminals to the equipment.



Caution The system shall only be used in an area of not more than Pollution Degree 2, as defined in IEC/EN 60664-1.



Caution The system shall be mounted in an ATEX/IECEx-certified enclosure with a minimum ingress protection rating of at least IP54 as defined in IEC/EN 60079-15.



Caution The enclosure must have a door or cover accessible only by the use of a tool.

Electromagnetic Compatibility Guidelines

This product was tested and complies with the regulatory requirements and limits for electromagnetic compatibility (EMC) stated in the product specifications. These requirements and limits provide reasonable protection against harmful interference when the product is operated in the intended operational electromagnetic environment.

This product is intended for use in industrial locations. However, harmful interference may occur in some installations, when the product is connected to a peripheral device or test object, or if the product is used in residential or commercial areas. To minimize interference with radio and television reception and prevent unacceptable performance degradation, install and use this product in strict accordance with the instructions in the product documentation.

Furthermore, any changes or modifications to the product not expressly approved by National Instruments could void your authority to operate it under your local regulatory rules.

Special Conditions for Marine Applications

Some products are approved for marine (shipboard) applications. To verify marine approval certification for a product, visit ni.com/product-certifications, search by model number, and click the appropriate link.



Notice In order to meet the EMC requirements for marine applications, install the product in a shielded enclosure with shielded and/or filtered power and input/output ports. In addition, take precautions when designing, selecting, and installing measurement probes and cables to ensure that the desired EMC performance is attained.

Preparing the Environment

Ensure that the environment in which you are using the NI 9265 meets the following specifications.

Operating temperature (IEC 60068-2-1, IEC 60068-2-2)	-40 °C to 70 °C
Operating humidity (IEC 60068-2-78)	10% RH to 90% RH, noncondensing
Pollution Degree	2
Maximum altitude	2,000 m

Indoor use only.

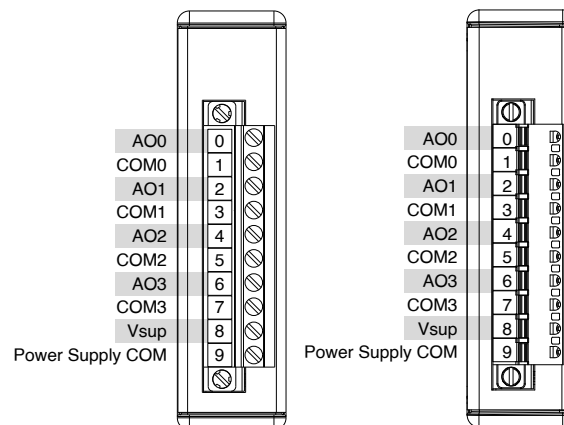


Note Refer to the device datasheet on ni.com/manuals for complete specifications.

Connecting the NI-9265

The NI-9265 provides connections for four analog output channels.

Figure 1. NI-9265 Pinout



Note You must use 2-wire ferrules to create a secure connection when connecting more than one wire to a single terminal on the NI-9265.

NI-9265 Signals

The NI-9265 has four analog output channels, AO. Each channel has a common terminal, COM, that is internally connected to the isolated ground reference of the module. The NI-9265 also has a terminal for an external power supply, Vsup, and an external power supply common terminal, Power Supply COM.

Load Connections

Connecting an External Power Supply

You must connect an external power supply to the NI-9265. This power supply provides the current for the devices you connect to the module.

When the module powers on, the channels output the startup current.

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-9265:

- Use ferrules to terminate wires to the detachable connector.
- Use the NI 9927 backshell kit with the NI-9265 with screw terminal or the NI 9981 backshell kit with the NI-9265 with spring terminal.

Where to Go Next

NI Services

Visit ni.com/support to find support resources including documentation, downloads, and troubleshooting and application development self-help such as tutorials and examples.

Visit ni.com/services to learn about NI service offerings such as calibration options, repair, and replacement.

Visit ni.com/register to register your NI product. Product registration facilitates technical support and ensures that you receive important information updates from NI.

NI corporate headquarters is located at 11500 N Mopac Expwy, Austin, TX, 78759-3504, USA.