
NI-9262

Specifications

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Definitions

Warranted specifications describe the performance of a model under stated operating conditions and are covered by the model warranty.

Characteristics describe values that are relevant to the use of the model under stated operating conditions but are not covered by the model warranty.

- **Typical** specifications describe the performance met by a majority of models.
- **Nominal** specifications describe an attribute that is based on design, conformance testing, or supplemental testing.

Specifications are **Typical** unless otherwise noted.

Conditions

Specifications are valid for the range -40 °C to 70 °C unless otherwise noted.

Related information:

- [Software Support for CompactRIO, CompactDAQ, Single-Board RIO, R Series, and EtherCAT](#)

Output Characteristics

Number of channels	6
DAC resolution	16 bits
Output range	

Minimum	± 10.669 V
Maximum	± 10.812 V
Typical	± 10.742 V
Current drive	
Per channel	± 10 mA
All channels (trip)	± 16 mA
All channels (hold)	± 9 mA maximum



Note The module will typically provide up to the all channels (trip) current before the limit activates. Once the limit activates, the typical total available current will drop to the all channels (hold) current to limit internal power dissipation. The module will not recover from the limit until the static current drawn drops below this typical hold current. NI recommends that you lower the static current required to drive the loads on all channels to a level below the all channels (hold) current if you expect to activate the limit.

Capacitive drive	1 nF
Output impedance	0.6 Ω
Power on state ^[1]	0 V

Power off state ^[2]	High Z
Overvoltage protection (AO-to-COM)	± 30 V maximum

Dynamic Characteristics

Minimum update time ^[3]	1.5 μ s
Maximum update rate	
CompactDAQ (NI-DAQmx)	1 MS/s
CompactRIO	
FPGA user-controlled I/O sampling ^[4]	1 MS/s
FPGA I/O nodes	600 kS/s
Noise (0.1 Hz to 1 MHz)	150 μ V RMS
Slew rate	5 V/ μ s
Channel-to-channel crosstalk (10 kHz)	-100 dB
Settling time	
0.1% accuracy	
±20 V step	10 μ s

1 LSB accuracy	
±20 V step, 100 pF	17 μs
±1 V step, 100 pF	6 μs
±0.1 V step, 100 pF	5 μs
INL (best fit)	±2 LSBs maximum
DNL	±1 LSB maximum
Stability	
Offset drift	±10 μV/°C
Gain drift	±5 ppm/°C
Glitch energy	9 nV · s (6 mV for 3 μs)

Table 1. Accuracy

	Measurement Conditions	Percent of Reading (Gain Error)	Percent of Range ^[5] (Offset Error)
Calibrated	Maximum (-40 °C to 70 °C)	0.2%	0.08%
	Typical (25 °C)	0.06%	0.01%
Uncalibrated ^[6]	Maximum (-40 °C to 70 °C)	0.46%	0.2%

	Measurement Conditions	Percent of Reading (Gain Error)	Percent of Range ^[5] (Offset Error)
	Typical (25 °C)	0.2%	0.08%

Power Requirements

Power consumption from chassis	
Active mode	950 mW maximum
Sleep mode	450 μ W maximum
Thermal dissipation (at 70 °C)	
Active mode	1.5 W maximum
Sleep mode	250 mW maximum

Physical Characteristics

Weight	147 g (5.0 oz)
Dimensions	Visit ni.com/dimensions and search by module number.

Environmental Characteristics

Temperature

Operating	-40 °C to 70 °C	
Storage	-40 °C to 85 °C	
Humidity		
Operating	10% RH to 90% RH, noncondensing	
Storage	5% RH to 95% RH, noncondensing	
Ingress protection	IP40	
Pollution Degree	2	
Maximum altitude	5,000 m	
Shock and Vibration		
Operating vibration		
Random	5 g RMS, 10 Hz to 500 Hz	
Sinusoidal	5 g, 10 Hz to 500 Hz	
Operating shock	30 g, 11 ms half sine; 50 g, 3 ms half sine; 18 shocks at 6 orientations	

To meet these shock and vibration specifications, you must panel mount the system.

Safety Voltages

Connect only voltages that are within the following limits.

AO-to-COM	±30 V maximum	
Isolation		
Channel-to-channel	None	
Channel-to-earth ground		
Continuous	60 V DC, Measurement Category I	
Withstand	1,000 V RMS, verified by a 5 s dielectric withstand test	

Measurement Category I



Warning Do not connect the product to signals or use for measurements within Measurement Categories II, III, or IV, or for measurements on MAINS circuits or on circuits derived from Overvoltage Category II, III, or IV which may have transient overvoltages above what the product can withstand. The product must not be connected to circuits that have a maximum voltage above the continuous working voltage, relative to earth or to other channels, or this could damage and defeat the insulation. The product can only withstand transients up to the transient overvoltage rating without breakdown or damage to the insulation. An analysis of the working voltages, loop impedances, temporary overvoltages, and transient overvoltages in the system must be conducted prior to making measurements.



Mise en garde Ne pas connecter le produit à des signaux dans les catégories de mesure II, III ou IV et ne pas l'utiliser pour des mesures dans ces catégories, ou des mesures sur secteur ou sur des circuits dérivés de

surtensions de catégorie II, III ou IV pouvant présenter des surtensions transitoires supérieures à ce que le produit peut supporter. Le produit ne doit pas être raccordé à des circuits ayant une tension maximale supérieure à la tension de fonctionnement continu, par rapport à la terre ou à d'autres voies, sous peine d'endommager et de compromettre l'isolation. Le produit peut tomber en panne et son isolation risque d'être endommagée si les tensions transitoires dépassent la surtension transitoire nominale. Une analyse des tensions de fonctionnement, des impédances de boucle, des surtensions temporaires et des surtensions transitoires dans le système doit être effectuée avant de procéder à des mesures.

Measurement Category I is for measurements performed on circuits not directly connected to the electrical distribution system referred to as **MAINS** voltage. MAINS is a hazardous live electrical supply system that powers equipment. This category is for measurements of voltages from specially protected secondary circuits. Such voltage measurements include signal levels, special equipment, limited-energy parts of equipment, circuits powered by regulated low-voltage sources, and electronics.



Note Measurement Categories CAT I and CAT O are equivalent. These test and measurement circuits are for other circuits not intended for direct connection to the MAINS building installations of Measurement Categories CAT II, CAT III, or CAT IV.

Calibration

You can obtain the calibration certificate and information about calibration services for the NI-9262 at ni.com/calibration.

Calibration interval	2 years
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