NI-9423 Specifications

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Contents

NI-9423 Specifications

NI-9423 Nomenclature

In this article, the NI-9423 with screw terminal and NI-9423 with spring terminal are referred to inclusively as the NI-9423. The information in this document applies to all version of the NI-9423 unless otherwise specified.

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.

Related information:

- Software Support for CompactRIO, CompactDAQ, Single-Board RIO, R Series, and EtherCAT

Conditions

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

NI-9423 Pinout

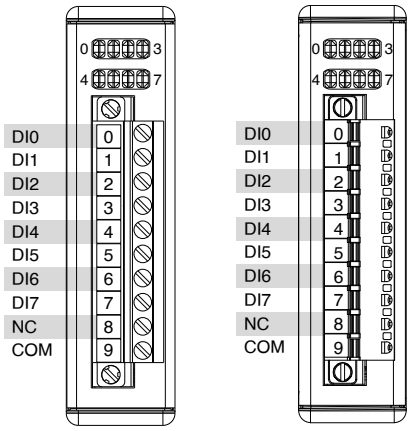

Table 1. Signal Descriptions

Signal	Description
COM	Common reference connection to isolated ground
DI	Digital input signal connection
NC	No connection

LED Indicators

Each channel has an LED that indicates the state of the channel, as the following table describes. The LEDs are disabled when the chassis is in sleep mode.

LED Pattern	Indication
Solid	The channel has been programmed to be in the ON state.
Off	The channel has been programmed to be in the OFF state.

Input Characteristics

Number of channels	8 digital input channels

Input type	Sinking
Digital logic levels	
OFF state	
Input voltage	≤5 V
Input current	≤150 µA
ON state	
Input voltage	11 V to 30 V
Input current	≥3 mA
I/O protection	
Input voltage	35 V maximum
Reverse-biased voltage	-30 V maximum
Input current	8.5 mA maximum, internally limited
Input delay time	1 µs maximum
MTBF	979,623 hours at 25 °C; Bellcore Issue 2, Method I, Case 3, Limited Part Stress Method

Safety Voltages

Connect only voltages that are within the following limits:

Channel-to-COM	30 V maximum
Isolation	
Channel-to-channel	None
Channel-to-earth ground	
Continuous	250 V RMS, Measurement Category II
Withstand	2,300 V RMS, verified by a 5 s dielectric withstand test

Measurement Category II

Caution Do not connect the product to signals or use for measurements within Measurement Categories III or IV.

Attention Ne pas connecter le produit à des signaux dans les catégories de mesure III ou IV et ne pas l'utiliser pour effectuer des mesures dans ces catégories.

Measurement Category II is for measurements performed on circuits directly connected to the electrical distribution system. This category refers to local-level electrical distribution, such as that provided by a standard wall outlet, for example, 115 V for U.S. or 230 V for Europe.

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	2,000 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.

Power Requirements

Power consumption from chassis	
Active mode	290 mW maximum
Sleep mode	7 mW maximum
Thermal dissipation (at 70 °C)	
Active mode	1.5 W maximum
Sleep mode	1.3 W maximum

Physical Characteristics

Screw-terminal wiring	
Gauge	0.2 mm^2 to 2.5 mm^2 (26 AWG to 14 AWG) copper conductor wire
Wire strip length	13 mm (0.51 in.) of insulation stripped from the end
Temperature rating	90 °C, minimum
Torque for screw terminals	0.5 N · m to 0.6 N · m (4.4 lb · in. to 5.3 lb · in.)

Wires per screw terminal	One wire per screw terminal; two wires per screw terminal using a 2-wire ferrule
Spring-terminal wiring	
Gauge	0.2 mm^2 to 2.5 mm^2 (30 AWG to 12 AWG) copper conductor wire
Wire strip length	10 mm (0.39 in.) of insulation stripped from the end
Temperature rating	90 °C, minimum
Wires per spring terminal	One wire per spring terminal; two wires per spring terminal using a 2-wire ferrule
Connector securement	
Securement type	Screw flanges provided
Torque for screw flanges	0.2 N · m (1.80 lb · in.)

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