cRIO-9068 Specifications

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Contents

cRIO-9068 Specifications

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 -40 °C to 70 °C unless otherwise noted.

Network

Network interface	10/100/1,000 Ethernet
Compatibility	IEEE 802.3
Communication rates	10 Mb/s, 100 Mb/s, 1,000 Mb/s auto-negotiated
Maximum cabling distance	100 m/segment

RS-232 Serial Ports

Maximum baud rate	230,400 b/s
Data bits	5, 6, 7, 8
Stop bits	1, 2
Parity	Odd, Even, Mark, Space
Flow control	RTS/CTS, XON/XOFF, DTR/DSR

RS-485 Serial Ports

Maximum baud rate	230,400 b/s
Data bits	5, 6, 7, 8
Stop bits	1, 2
Parity	Odd, Even, Mark, Space
Flow control	XON/XOFF
Transmission modes	2-wire auto, 4-wire

Isolation voltage	60 V DC continuous [1]

Memory

Nonvolatile memory	1 GB
DRAM	512 MB

Note Visit ni.com/info and enter Info Code `SSDBP` for information about the life span of the nonvolatile memory and about best practices for using nonvolatile memory.

Reconfigurable FPGA

FPGA type	Xilinx Zynq 7020
Number of flip-flops	106,400
Number of 6-input LUTs	53,200
Number of DSP slices (18 × 25 multipliers)	220
Available block RAM	4,480 kbits

1. Refer to the Safety Voltages section of this document for more information about the RS-485 serial port isolation voltage.

Number of DMA channels	16
Number of logical interrupts	32

Internal Real-Time Clock

Accuracy	5 ppm

Power Requirements

Voltage input range	9 V to 30 V
Maximum power input	25 W
Maximum power consumption	25 W

Note The maximum power consumption specification is based on a fully populated system running a high-stress application at elevated ambient temperature and with all C Series modules and USB devices consuming the maximum allowed power.

Battery

Note The battery is not user-replaceable. Refer to the ***cRIO-9068 Safety, Environmental, and Regulatory Information*** document for information about replacing the battery.

Typical battery life with power applied to power connector	10 years
Typical battery life in storage at 55 °C	5.7 years
Minimum battery life in storage at 85 °C	5.3 years

Physical Characteristics

Dimensions and Weight

Dimensions	302.8 mm × 88.1 mm × 62.3 mm (11.92 in. × 3.47 in. × 2.45 in.)
Weight	1,164 g (41.1 oz)

Screw Terminal Wiring

Gauge	0.2 mm^2 to 2.1 mm^2 (24 AWG to 14 AWG) copper conductor wire
Wire strip length	10 mm (0.39 in.) of insulation stripped from the end
Temperature rating	85 °C
Torque for screw terminals	0.20 N · m to 0.25 N · m (1.8 lb · in. to 2.2 lb · in.)

Wires per terminal	One wire per screw terminal
Connector securement	
Securement type	Screw flanges provided
Torque for screw flanges	0.3 N · m to 0.4 N · m (2.7 lb · in. to 3.5 lb · in.)

Safety Voltages

Connect only voltages that are within the following limits:

V terminal to C terminal	30 V maximum, Measurement Category I
Isolation voltage, RS-485 serial port 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

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

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

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.

Environmental

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 specifications, you must mount the system directly on a flat, rigid surface as described in the user manual, affix ferrules to the ends of the terminal lines, and provide strain relief for all cables.