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TB-2627

SPECIFICATIONS

PXI-4071

7½-Digit, ±1,000 V, Onboard 1.8 MS/s Isolated Digitizer, PXI Digital Multimeter

These specifications apply to the PXI-4071.

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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 expected performance met by a majority of the models.
- *Nominal* specifications describe parameters and attributes that may be useful in operation.

Specifications are *Warranted* unless otherwise noted.

Conditions

Specifications are valid under the following conditions unless otherwise noted.

- Calibration interval of 2 years
- 1 hour of warm-up time

DC Specifications

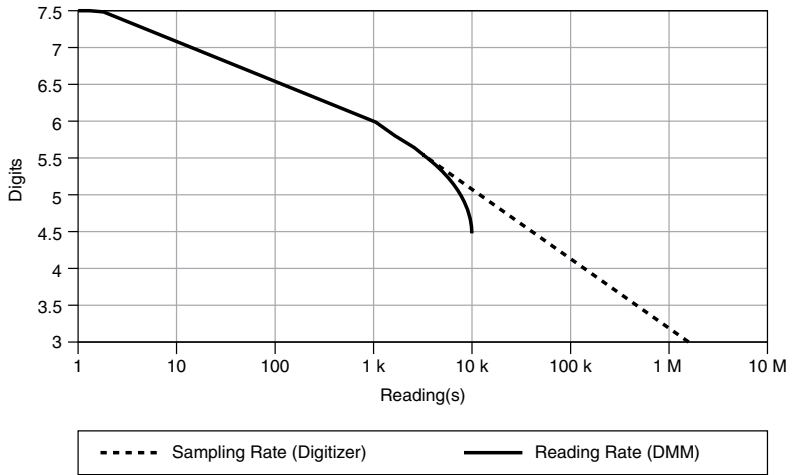
Table 1. PXI-4071 DC Speeds, Nominal

Digits	Bits	Max Sampling Rate ¹ (Digitizer)	Reading Rate ² (DMM)
7½	26	N/A	7 S/s
6½	22	100 S/s	100 S/s
5½	18	5 kS/s	3 kS/s
4½	15	20 kS/s	7 kS/s
3	10	1.8 MS/s	N/A

¹ Maximum sampling rates refer to waveform acquisition in digitizer mode.

² Auto Zero disabled, except 7½ digits, measured on a 10 V and 10 kΩ range.

Figure 1. DC Voltage Maximum Reading Rate, Nominal



DC System Speeds

Range or function change	100/s
Auto Range time, DC V	5 ms
Auto Range time, DC I	10 ms
Auto Range time, resistance	50 ms
Trigger latency	2 μ s
Maximum trigger rate	6 kHz

DC Accuracy Specifications

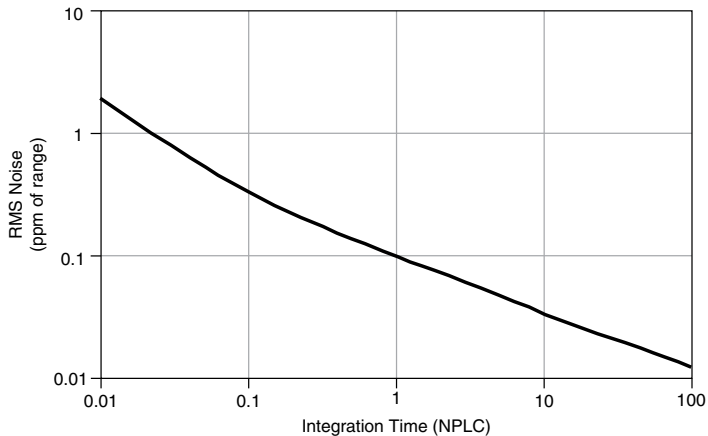


Note All DC voltage accuracy specifications apply to 7½-digit resolution, Auto Zero and ADC calibration enabled.

Table 2. DC Voltage ± (ppm of reading + ppm of range)

Range	Resolution	24 Hr ³ T _{cal} ±1 °C ⁴	90 Day 18 °C to 28 °C T _{cal} ±1 °C	2 Year 18 °C to 28 °C T _{cal} ±1 °C	Tempco/°C 0 °C to 55 °C		2 Year ⁵ 0 °C to 55 °C T _{cal} ±5 °C
					Without Self-cal	With Self- cal	
100 mV ⁶	10 nV	5 + 4	18 + 7	20 + 8	3 + 2	0.3 + 1	30 + 10
1 V ⁷	100 nV	4 + 0.8	13 + 0.8	15 + 0.8	2 + 0.2	0.3 + 0.1	22 + 0.8
10 V	1 μV	2 + 0.5	9 + 0.5	12 + 0.5	0.3 + 0.02	0.3 + 0.01	15 + 0.5
100 V	10 μV	5 + 2	18 + 2	20 + 2	4 + 0.2	0.3 + 0.1	32 + 2
1000 V ⁸	100 μV	4 + 0.5	18 + 0.5	20 + 0.5	3 + 0.02	0.3 + 0.01	32 + 0.5

Figure 2. Additional Noise Error



³ Relative to external calibration source.

⁴ T_{cal} is the temperature at which the last self-calibration or external calibration was performed.

⁵ Using internal self-calibration; specifications valid over the entire operating temperature range.

⁶ With offset nulling.

⁷ With offset nulling; add 1.3 ppm of range for no offset nulling.

⁸ For inputs above 300 V, add 25 ppm × (V_{in}/1000 V)² to the 90 Day and 2 Year columns.

Table 3. RMS Noise⁹

Range	Multiplier
100 mV	× 15
1 V	× 2
10 V	× 1
100 V	× 6
1000 V	× 1



Note All DC current specifications apply to 6½-digit resolution, Auto Zero and ADC calibration enabled.

Table 4. DC Current ± (ppm of reading + ppm of range)

Range	Resolution	Burden Voltage	24 Hr ¹⁰ T _{cal} ±1 °C	90 Day 18 °C to 28 °C T _{cal} ±1 °C	2 Year 18 °C to 28 °C T _{cal} ±1 °C	Tempco ¹¹ /°C 0 °C to 55 °C
1 µA ¹²	1 pA	<55 mV	25 + 20	320 + 40	350 + 40	25 + 0.7
10 µA ¹²	10 pA	<550 mV	25 + 2	320 + 15	350 + 15	25 + 0.7
100 µA	100 pA	<60 mV	10 + 20	71 + 20	100 + 20	10 + 0.5
1 mA	1 nA	<60 mV	4 + 20	80 + 20	100 + 20	4 + 0.5
10 mA	10 nA	<60 mV	12 + 20	90 + 20	110 + 20	12 + 0.5
100 mA	100 nA	<100 mV	9 + 20	140 + 20	165 + 20	15 + 0.5
1 A ¹³	1 µA	<250 mV	15 + 20	240 + 20	290 + 20	11 + 0.5
3 A ¹³	1 µA	<700 mV	15 + 30	390 + 30	440 + 30	11 + 0.5

⁹ Multiply the RMS noise value from the Additional Noise Error graph by the range-appropriate multiplier in this table. For the peak-to-peak noise error, multiply the RMS noise by 6.

¹⁰ Relative to external calibration source.

¹¹ Tempco is the temperature coefficient.

¹² 90-day and 2-year specifications are typical.

¹³ To account for self-heating effects, for currents higher than 500 mA, add $I^2 * 75$ ppm of reading to the specification.

Table 5. Additional Noise Errors for Current

Resolution	Additional Noise Error
5½ digits	10 ppm of range
5 digits	30 ppm of range
4½ digits	100 ppm of range



Note All resistance specifications apply to 7½-digit resolution, Auto Zero and ADC calibration enabled.

Table 6. Resistance (4-Wire and 2-Wire¹⁴) ± (ppm of reading + ppm of range)

Range ¹⁵	Test Current ¹⁶	Max Test Voltage	24 Hr ¹⁷ T _{cal} 18±1 °C	90 Day 18 °C to 28 °C T _{cal} ±1 °C	2 Year 18 °C to 28 °C T _{cal} ±1 °C	Tempco ¹⁹ /°C 0 °C to 55 °C		2 Year ²⁰ 0 °C to 55 °C T _{cal} ±5 °C
						Without Self-cal	With Self-cal	
100 Ω ²¹	1 mA	100 mV	8 + 2.5	31 + 4	56 + 4	6 + 0.12	0.8 + 0.12	60 + 5
1 kΩ ²¹	1 mA	1 V	5 + 0.5	26 + 0.5	48 + 0.5	5 + 0.05	0.8 + 0.05	55 + 1
10 kΩ ²¹	100 µA	1 V	5 + 0.5	26 + 0.5	48 + 0.5	5 + 0.05	0.8 + 0.05	55 + 1
100 kΩ ²²	10 µA	1 V	5 + 1	28 + 1	50 + 1	5 + 0.2	0.8 + 0.1	56 + 6
1 MΩ	10 µA	10 V	5 + 1	30 + 1	52 + 1	5 + 0.05	3 + 0.05	58 + 1

¹⁴ Perform offset nulling or add 200 mΩ to reading.

¹⁵ For ranges ≥1 MΩ and relative humidity >80%, add 100 ppm/MΩ.

¹⁶ -10% to 0% tolerance.

¹⁷ Relative to external calibration source.

¹⁸ T_{cal} is the temperature at which the last self-calibration or external calibration was performed.

¹⁹ Tempco is the temperature coefficient.

²⁰ Using internal self-calibration; specifications valid over the entire operating temperature range.

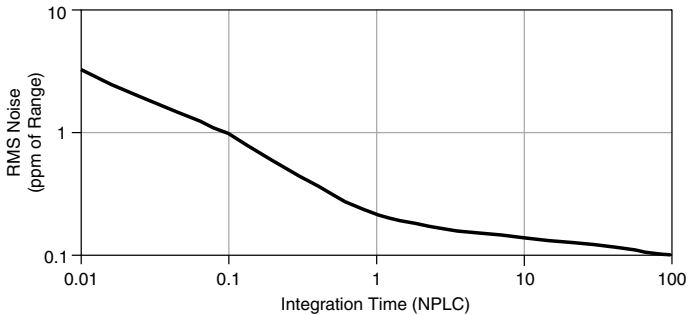
²¹ With offset compensated ohms enabled. For ADC calibration disabled, add 4 ppm of 100 Ω range and 0.4 ppm of 1 kΩ and 10 kΩ range to the 90 Day and 2 Year columns.

²² Perform offset nulling or add 1 ppm of range to the 24 Hr column and add 7 ppm of range to 90 Day and 2 Year columns.

Table 6. Resistance (4-Wire and 2-Wire¹⁴) ± (ppm of reading + ppm of range) (Continued)

Range ¹⁵	Test Current ¹⁶	Max Test Voltage	24 Hr ¹⁷ T _{cal} ¹⁸ ± 1 °C	90 Day 18 °C to 28 °C T _{cal} ± 1 °C	2 Year 18 °C to 28 °C T _{cal} ± 1 °C	Tempco ¹⁹ /°C 0 °C to 55 °C		2 Year ²⁰ 0 °C to 55 °C T _{cal} ± 5 °C
						Without Self-cal	With Self-cal	
10 MΩ	1 μA	10 V	60 + 5	70 + 10	90 + 10	20 + 1	20 + 1	400 + 10
30 MΩ ²³	1 μA 10 MΩ	10 V	180 + 20	240 + 30	360 + 60	60 + 20	60 + 20	—
100 MΩ ²⁴	1 μA 10 MΩ	10 V	500 + 6	5500 + 10	6000 + 20	250 + 6	250 + 6	—
5 GΩ ^{24, 25}	1 μA 10 MΩ	10 V	1% + 0.2%	5% + 0.2%	5% + 0.2%	2500 + 0.2%	2500 + 0.2%	—

Figure 3. Additional Noise Error



¹⁴ Perform offset nulling or add 200 mΩ to reading.

¹⁵ For ranges ≥ 1 MΩ and relative humidity > 80%, add 100 ppm/MΩ.

¹⁶ -10% to 0% tolerance.

¹⁷ Relative to external calibration source.

¹⁸ T_{cal} is the temperature at which the last self-calibration or external calibration was performed.

¹⁹ Tempco is the temperature coefficient.

²⁰ Using internal self-calibration; specifications valid over the entire operating temperature range.

²³ Applies to 100 MΩ range up to 30 MΩ. 2-wire resistance measurement only. Use tempco outside 18 °C to 28 °C.

²⁴ 2-wire resistance measurement only. Use tempco outside 18 °C to 28 °C.

²⁵ Typical specification.

Table 7. RMS Noise²⁶

Range	Multiplier
100 Ω	$\times 8$
1 k Ω	$\times 1$
10 k Ω	$\times 1$
100 k Ω	$\times 2$
1 M Ω	$\times 3.5$
10 M Ω	$\times 5$
100 M Ω	$\times 55$
5 G Ω	$\times 2500$



Note All diode specifications apply to 6½-digit resolution, Auto Zero and ADC calibration enabled.

Table 8. Diode Test

Range	Resolution	Test Current ²⁷	Accuracy
10 V	10 μ V	1 μ A, 10 μ A, 100 μ A, 1 mA ²⁸	Add 20 ppm of reading to 10 VDC voltage specifications.

DC Functions General Specifications

Effective CMRR (1 k Ω resistance in LO lead)	>140 dB (DC), 100 ms aperture; >170 dB (>46 Hz) with high-order DC noise rejection, 100 ms aperture
Maximum 4-wire lead resistance	Use the lesser of 10% of range or 1 k Ω
Overrange	105% of range except 1000 V and 3 A range
DC voltage input bias current	<30 pA at 23 °C, typical
Input Impedance	>10 G Ω or 10 M Ω (100 mV, 1 V, and 10 V ranges only) in parallel with 90 pF, nominal

²⁶ Multiply the RMS noise value from the Additional Noise Error graph by the range-appropriate multiplier in the RMS Noise table. For the peak-to-peak noise error, multiply the RMS noise by 6.

²⁷ -10% to 0% tolerance.

²⁸ Up to 4.0 V measurement for 1 mA test current.

Table 9. Normal-Mode Rejection Ratio (NMRR)

Readings/s	NMRR	Conditions
10	>100 dB ²⁹	All noise sources >46 Hz
50 (60)	>60 dB ³⁰	50 (60) Hz ±0.1%

AC Specifications



Note All AC speed specifications apply with Auto Zero disabled.

Table 10. PXI-4071 AC Bandwidth

Digits	Reading Rate	Bandwidth
6½	0.25 S/s	1 Hz to 300 kHz
6½	2.5 S/s	10 Hz to 300 kHz
6½	25 S/s	100 Hz to 300 kHz
6½	100.0 S/s	400 Hz to 300 kHz
5½	1.0 kS/s	20 kHz to 300 kHz

AC System Speeds

Range or function change 10/s

Auto Range time, AC V and AC I 250 ms

Trigger latency 2 µs

Maximum trigger rate 1 kHz

AC Accuracy Specifications



Note All AC accuracy specifications apply to 6½ digit resolution, signal amplitudes greater than 1% of range, and Auto Zero enabled.

²⁹ With high-order DC noise rejection; 100 ms aperture.

³⁰ With normal DC noise rejection; 20 ms (16.67 ms) aperture.

Table 11. AC Voltage³¹ 2 Year ± (% of reading + % of range), 18 °C to 28 °C

Range (RMS)	Peak Voltage	Resolution	1 Hz to 40 Hz ³²	>40 Hz to 20 kHz	>20 kHz to 50 kHz	>50 kHz to 100 kHz	>100 kHz to 300 kHz
50 mV ³³	±105 mV	100 nV	0.1 + 0.02	0.05 + 0.02	0.07 + 0.02	0.3 + 0.02	0.7 + 0.15
500 mV	±1.05 V	1 µV	0.1 + 0.005	0.05 + 0.005	0.06 + 0.01	0.2 + 0.01	0.7 + 0.15
5 V	±10.5 V	10 µV					
50 V	±105 V	100 µV	0.1 + 0.005	0.06 + 0.01	0.12 + 0.05	0.6 + 0.05	3 + 0.15
700 V	±1000 V	1 mV					

Table 12. AC Voltage Tempco/°C (0 °C to 55 °C)

Range (RMS)	1 Hz to 40 Hz	>40 Hz to 20 kHz	>20 kHz to 50 kHz	>50 kHz to 100 kHz	>100 kHz to 300 kHz
50 mV	0.001 + 0.0002	0.001 + 0.0002	0.001 + 0.001	0.001 + 0.001	0.01 + 0.01
500 mV					
5 V					
50 mV	0.001 + 0.0002	0.003 + 0.0002	0.012 + 0.001	0.045 + 0.001	0.1 + 0.01
700 mV					

AC Voltage General Specifications

Input impedance	10 MΩ in parallel with 90 pF, nominal
Input coupling	AC or DC coupling
Overrange	105% of range except 700 V
Maximum Volt-Hertz product	>8 × 10 ⁷ V-Hz
Maximum DC voltage component	400 V

³¹ After self-calibration. Measurement aperture greater than 4/f_L, where f_L is the lowest frequency component of the signal being measured.

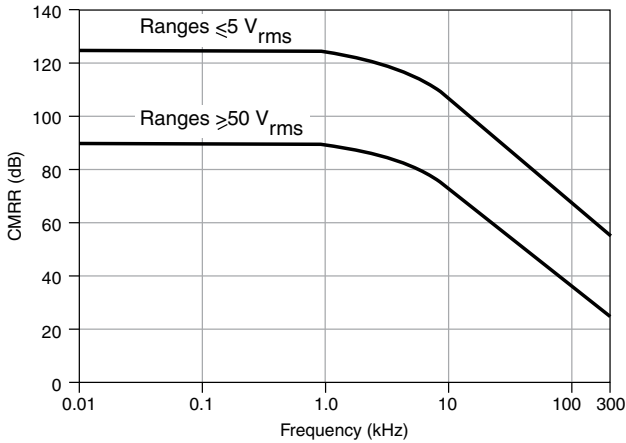
³² Specification applies for DC coupling.

³³ Applies to signals >1 mVrms.

CMRR

1 k Ω resistance in LO lead	>70 dB (DC to 60 Hz)
Over full bandwidth (without 1 k Ω resistance in LO lead)	Refer to the CMRR Over Full Bandwidth graph, typical.

Figure 4. CMRR Over Full Bandwidth, Typical



AC Current General Specifications

Table 13. AC Current³⁴ 2 Year \pm (% of reading + % of range), 18 °C to 28 °C

Range (RMS)	Peak Current	Resolution	Burden Voltage (RMS at 1 kHz), Typical	1 Hz to 5 kHz	5 kHz to 10 kHz ³⁵	10 kHz to 20 kHz ³⁵	Tempco/°C (0 °C to 55 °C)
100 μ A ³⁶	\pm 200 μ A	100 pA	<60 mV	0.03 + 0.02	—	—	0.002 + 0.0002
1 mA	\pm 2 mA	1 nA	<60 mV	0.03 + 0.02	0.06 + 0.02	0.08 + 0.02	0.001 + 0.0001

³⁴ Measurement aperture greater than $4/f_L$, where f_L is the lowest frequency component of the signal being measured.

³⁵ Specification is typical above 5 kHz.

³⁶ Applies to signals $>9 \mu$ Arms and ≤ 1 kHz.

Table 13. AC Current³⁴ 2 Year ± (% of reading + % of range), 18 °C to 28 °C (Continued)

Range (RMS)	Peak Current	Resolution	Burden Voltage (RMS at 1 kHz), Typical	1 Hz to 5 kHz	5 kHz to 10 kHz ³⁵	10 kHz to 20 kHz ³⁵	Tempco/°C (0 °C to 55 °C)
10 mA	±20 mA	10 nA	<60 mV	0.03 + 0.02	0.06 + 0.02	0.08 + 0.02	0.002 + 0.0002
100 mA	±200 mA	100 nA	<100 mV	0.03 + 0.02	0.06 + 0.02	0.15 + 0.02	0.001 + 0.0002
1 A	±2 A	10 µA	<250 mV	0.1 + 0.02	0.24 + 0.02	0.8 + 0.02	0.002 + 0.0002
3 A	±4.2 A ³⁷	10 µA	<700 mV	0.1 + 0.02	0.24 + 0.02	0.8 + 0.02	0.002 + 0.0001



Note No degradation in accuracy occurs due to crest factor for signals up to the rated peak voltage/current or bandwidth. For high crest factor signals, increase range. For example, for a 500 mVrms signal with a crest factor between 2 and 20, use the 5 V range.

Overrange

105% of range except 3 A range

Frequency and Period

Table 14. PXI-4071 Frequency and Period³⁸

Input Range	Frequency Range	Period Range	Resolution	2-Year Accuracy ³⁹ 0 °C to 55 °C ± % of reading
50 mV to 700 V	1 Hz to 500 kHz	1 s to 2 µs	6½ digits	0.01

³⁴ Measurement aperture greater than $4/f_L$, where f_L is the lowest frequency component of the signal being measured.

³⁵ Specification is typical above 5 kHz.

³⁷ Sine wave only.

³⁸ 2 second gate time; input signal must be >10% of AC voltage input range.

³⁹ 0.00025% of reading, typical.

Temperature Accuracy Specifications (°C)

Table 15. Thermocouple Temperature Accuracy Specifications (°C)⁴⁰

Type	Range	2 Year 18 °C to 28 °C T _{cal} ±1 °C		Tempco/°C ⁴¹	Resolution
		With Simulated Ref. Junction ⁴²	With PXI-2527 ⁴³		
J	-150 to 1200	0.3	1.0	0.03	0.1
	-210 to -150	0.4	1.2	0.03	0.1
K	-100 to 1200	0.4	1.0	0.03	0.1
	-200 to -100	0.4	1.5	0.03	0.1
N	-100 to 1300	0.3	1.0	0.03	0.1
	-200 to -100	0.6	1.5	0.03	0.1
T	-100 to 400	0.3	1.0	0.03	0.1
	-200 to -100	0.4	1.5	0.03	0.1
E	-150 to 1000	0.2	1.0	0.03	0.1
	-200 to -150	0.3	1.5	0.03	0.1
R	300 to 1760	0.6	1.8	0.06	0.1
	-50 to 300	1.4	1.9	0.06	0.1
S	400 to 1760	0.7	1.8	0.06	0.1
	-50 to 400	1.3	1.8	0.06	0.1
B	1100 to 1820	0.6	1.8	0.09	0.1
	400 to 1100	1.4	1.9	0.09	0.1

⁴⁰ T_{cal} is the temperature at which the last external calibration was performed. For total measurement accuracy, add temperature probe error.

⁴¹ Tempco is the temperature coefficient, expressed in degrees of measurement uncertainty per degree change in DMM instrument operating temperature.

⁴² Using simulated reference junction.

⁴³ Includes PXI-2527 with TB-2627 with a typical 0.5 °C CJC error and a typical thermal EMF offset of 2.5 µV for CJC temperatures between 15 °C and 35 °C. Add an additional 0.5 °C uncertainty when CJC is in the range 0-15 °C or 35-50 °C.

Table 16. RTD⁴⁴ Temperature Accuracy Specifications (°C)

Range	2 year 18 °C to 28 °C T _{cal} ±1 °C ⁴²	Tempco/°C ⁴¹	Resolution
-200 to 600	0.14	0.011	0.01

Table 17. Thermistor Temperature Accuracy Specifications (°C)⁴⁵

Range	2 year 18 °C to 28 °C T _{cal} ±1 °C ⁴²	Tempco/°C ⁴¹	Resolution
-80 to 150	0.08	0.002	0.01

Isolated Digitizer Specifications



Note For typical DC accuracy, refer to the DC voltage specifications and the DC current specifications in the DC Specifications section.

Table 18. Voltage Mode

Range	Input Impedance, Nominal ⁴⁶	Flatness Error 20 kHz, Typical	Bandwidth (-3 dB), Typical ⁴⁷	THD 1 kHz signal, -1 dBfs, Typical	THD 20 kHz signal, -1 dBfs, Typical
100 mV	>10 GΩ, 10 MΩ	-0.014 dB	340 kHz	-108 dB	-90 dB
1 V	>10 GΩ, 10 MΩ	-0.014 dB	335 kHz	-110 dB	-86 dB
10 V	>10 GΩ, 10 MΩ	-0.014 dB	325 kHz	-90 dB	-64 dB
100 V	10 MΩ	-0.050 dB	280 kHz	-110 dB	-92 dB
1000 V	10 MΩ	-0.050 dB	245 kHz	-89 dB	-70 dB

⁴⁴ Based on RTD with R_O = 100 Ω Pt3851 RTD in a 4-wire configuration, using lowest possible resistance range for each temperature. For total measurement accuracy, add temperature probe error.

⁴⁵ For total measurement accuracy, add temperature probe error.

⁴⁶ In parallel with 90 pF.

⁴⁷ The AC coupling low frequency (-3 dB) point is 0.7 Hz.

Table 19. Current Mode

Range	Burden Voltage, Typical	Flatness Error 20 kHz, Typical	Bandwidth (-3 dB), Typical
100 μ A	<60 mV	± 0.42 dB	42 kHz
1 mA	<60 mV	± 0.01 dB	450 kHz
10 mA	<60 mV	± 0.01 dB	450 kHz
100 mA	<100 mV	± 0.01 dB	450 kHz
1 A	<250 mV	± 0.01 dB	450 kHz
3 A	<700 mV	± 0.01 dB	450 kHz

Acquisition System

Sampling rate and record duration

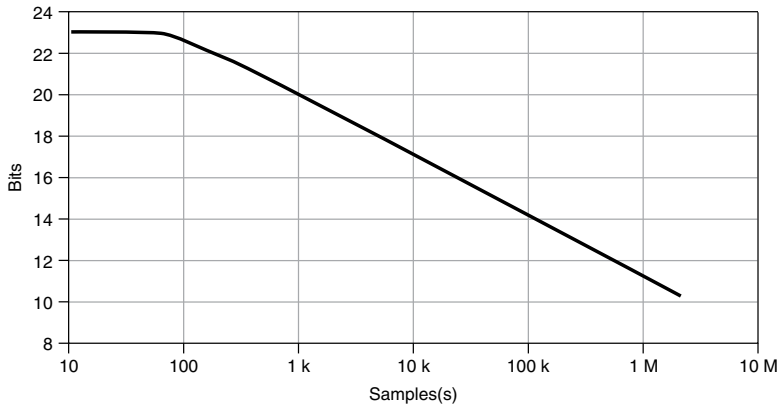
Available sampling rates	$r = \frac{1.8 \text{ MS/s}}{y}$, where $y = 1, 2, 3, \dots, 1.8 \times 10^5$
Minimum record duration	8.89 μ s
Maximum record duration	149 s
Record duration	n/r , where n = number of samples, r = sampling rate
Variable resolution	10-23 bits; refer to Digitizer Maximum Sampling Rate graph
Available functions	Voltage and current
Voltage ranges	± 100 mV to ± 1000 V (DC or AC coupled)
Current ranges	± 100 μ A to ± 3 A
Timebase accuracy	25 ppm
Input trigger	
Latency ⁴⁸	3.6 μ s
Jitter	<600 ns



Note Refer to *Trigger Specifications* for additional input trigger specifications.

⁴⁸ The latency specification value actually reflects negative latency due to sampling before the trigger. Can be reduced to near zero (with the jitter specification) or made positive in software by adding a trigger delay.

Figure 5. Digitizer Maximum Sampling Rate, Nominal



General Specifications

Warm-up	1 hour to rated accuracy
Self-calibration	Calibrates the FlexDMM relative to high-precision internal voltage and resistance standards. No external calibration equipment required.
External calibration interval	2 year recommended
Measurement category	I ⁴⁹ (up to 1000 VDC or AC _{rms}), II (up to 500 VDC or AC _{rms})



Caution Do not use this device for connection to signals or for measurements within Measurement Categories III or IV.

Input protection	
Resistance	
2-wire	Up to 1000 VDC
4-wire	Up to 500 VDC

⁴⁹ Measurement Categories CAT I and CAT O (Other) are equivalent. These test and measurement circuits are not intended for direct connection to the MAINS building installations of Measurement Categories CAT II, III, or CAT IV.

Diode	Up to 1000 VDC
DC V, AC V	Up to 1000 VDC, 700 V AC _{rms} , 1000 V AC peak
DC I and AC I	F 3 A 250 V fast-acting user-replaceable fuse
Maximum common-mode voltage	500 VDC or AC _{rms}
Maximum voltage to earth ground	
HI	1000 VDC or peak AC
LO	500 VDC or peak AC
HI SENSE	500 VDC or peak AC
LO SENSE	500 VDC or peak AC



Fuse When this fuse symbol is marked on a device, take proper precautions.



Hazardous Voltage This icon denotes a warning advising you to take precautions to avoid electrical shock.

Trigger Characteristics

Measurement complete trigger pulse width	3 μ s
Input trigger pulse width	1 μ s, with <2 m cable
Maximum voltage to earth ground at AUX I/O connector	5.5 V DC
Trigger voltage levels	
Vin High	2.0 V min
Vin Low	0.8 V max
Vout High	2.4 V min
Vout Low	0.4 V max
Trigger voltage level absolute maximums	
Vin High	5.5 V
Vin Low	-0.5 V



Note Triggers are LVTTTL/TTL compatible.



Caution The AUX I/O connector on the PXI-4071 is not isolated. This connector is not referenced to the measurement circuit but is referenced to the ground of the PXI chassis. Do not operate the digital signals of this connector beyond -0.5 V to 5.5 V of the PXI chassis ground.

Power Requirements



Caution Do not operate the PXI-4071 in a manner not specified in this document. Product misuse can result in a hazard. You can compromise the safety protection built into the product if the product is damaged in any way. If the product is damaged, return it to NI for repair.

Power consumption

<8 W from PXI backplane

Table 20. PXI-4071 Power Requirements, Typical

Rail Voltage	Current Consumption	Power Consumption
12 V	500 mA	6.00 W
5 V	30 mA	0.15 W
3.3 V	230 mA	0.76 W
-12 V	0 mA	0.00 W

Physical Characteristics

Dimensions

3U, one-slot, PXI/cPCI module
2.0 cm × 13.0 cm × 21.6 cm (0.8 in. × 5.1 in. × 8.5 in.)

Weight

314 g (11 oz)



Note If you need to clean the device, wipe it with a dry towel.

Environment

Maximum altitude

2,000 m (at 25 °C ambient temperature)

Pollution Degree

2

Indoor use only.

Operating Environment

Ambient temperature range

0 °C to 55 °C (Tested in accordance with IEC 60068-2-1 and IEC 60068-2-2.)

Relative humidity range

Up to 95% at 40 °C

Storage Environment

Ambient temperature range	-40 °C to 70 °C (Tested in accordance with IEC 60068-2-1 and IEC 60068-2-2.)
Relative humidity range	5% to 95%, noncondensing (Tested in accordance with IEC 60068-2-56.)

Shock and Vibration

Operational shock	30 g peak, half-sine, 11 ms pulse (Tested in accordance with IEC 60068-2-27. Test profile developed in accordance with MIL-PRF-28800F.)
Random vibration	
Operating	5 Hz to 500 Hz, 0.3 g _{rms} (Tested in accordance with IEC 60068-2-64.)
Nonoperating	5 Hz to 500 Hz, 2.4 g _{rms} (Tested in accordance with IEC 60068-2-64. Test profile exceeds the requirements of MIL-PRF-28800F, Class 3.)

Compliance and Certifications

Safety

This product is designed to meet the requirements of the following electrical equipment safety standards for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA C22.2 No. 61010-1



Note For UL and other safety certifications, refer to the product label or the [Online Product Certification](#) section.

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326-1 (IEC 61326-1): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- EN 55022 (CISPR 22): Class A emissions
- EN 55024 (CISPR 24): Immunity
- AS/NZS CISPR 11: Group 1, Class A emissions
- AS/NZS CISPR 22: Class A emissions

- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions



Caution To ensure the specified EMC performance, operate this product according to the documentation.



Note In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia, and New Zealand (per CISPR 11), Class A equipment is intended for use only in heavy-industrial locations.



Note Group 1 equipment (per CISPR 11) is any industrial, scientific, or medical equipment that does not intentionally generate radio frequency energy for the treatment of material or inspection/analysis purposes.



Note For EMC declarations, certifications, and additional information, refer to the [Online Product Certification](#) section.

CE Compliance

This product meets the essential requirements of applicable European Directives, as follows:

- 2014/35/EU; Low-Voltage Directive (safety)
- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)

Online Product Certification

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for this product, visit ni.com/certification, search by model number or product line, and click the appropriate link in the Certification column.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

For additional environmental information, refer to the *Minimize Our Environmental Impact* web page at ni.com/environment. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

Waste Electrical and Electronic Equipment (WEEE)



EU Customers At the end of the product life cycle, all NI products must be disposed of according to local laws and regulations. For more information about how to recycle NI products in your region, visit ni.com/environment/weee.

电子信息产品污染控制管理办法（中国 RoHS）



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