

SPECIFICATIONS

RM-26999

4 Channel, Power Measurements Conditioning Rackmount Terminal Block

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.
- *Typical-95* specifications describe the performance met by 95% ($\approx 2\sigma$) of models with a 95% confidence.
- *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 0 °C to 55 °C unless otherwise noted.

These specifications are for the RM-26999. Accuracy for the entire system must be calculated including both the RM-26999 accuracy and the DAQ device accuracy.

Voltage Input Characteristics

Input voltage, maximum	1,000 V, Category II 2,000 V peak, other, non-MAINs circuits
Number of channels	4

Table 1. Signal Accuracy

Range	Signal Frequency	Accuracy ¹	
		Typical-95	Warranted
2,000 V	DC	±0.05% of reading	
	1 Hz to 500 Hz	±0.08% of reading	±0.1% of reading
	>500 Hz to 1 kHz	±0.1% of reading	±0.2% of reading
	>1 kHz to 5 kHz	±0.25% of reading	±0.9% of reading
	>5 kHz to 10 kHz	±0.3% of reading	±1.15% of reading
	>10 kHz to 200 kHz	±0.4% of reading	±1.35% of reading
	>200 kHz to 1 MHz	±(0.004 × <i>signal frequency</i>)% of reading	±(0.014 × <i>signal frequency</i>)% of reading

Table 2. System Noise

Range	Noise (V_{rms})
±2,000 V	53 mV
±1,000 V	31 mV
±400 V	22 mV
±200 V	21 mV



Note The system noise specifications above are representative values to help understand the expected quality of the measurement. A PXIe-6366 and RM-26999 were used to create this representative table.

T_{cal} ²	23 °C ± 5 °C
Gain drift	±25 ppm/°C
Attenuation	200:1
Long-term stability	125 ppm/ $\sqrt{1,000}$ hrs
Input impedance, single-ended to earth	10 M Ω 4.7 pF
-3 dB bandwidth	1 MHz
Output impedance	50 Ω

¹ T_{cal} ±5 °C. Accuracy is valid after offset compensation.

² T_{cal} = temperature at which last external calibration was performed.

Current Input Characteristics



Note Current input characteristics are determined by the connected DAQ devices. For more information about device input characteristics, refer to the device documentation on ni.com/manuals.



Note If you connect a current transducer with current output to the RM-26999, install a shunt to convert the current signal to a voltage signal. Refer to the *RM-26999 User Manual* on ni.com/manuals for more information about connecting current transducers with current output.

Number of channels	4
DAQ device measurement voltage ranges	± 1 V, ± 2 V, ± 5 V, ± 10 V
Burden resistors	0.5 Ω , 1 Ω , 2 Ω , 5 Ω , 10 Ω
Maximum current input	Selectable on the DAQ device
Input protection	Determined by the DAQ device
Shunt accuracy	$\pm 0.05\%$, metal foil, 2 W, maximum
Shunt gain drift	± 0.2 ppm/ $^{\circ}$ C

Power Requirements

Voltage input range	24 V DC \pm 5%
Maximum power consumption	150 W, maximum
Recommended power supply	NI PS-15 (5 A, 120 W) NI PS-16 (10 A, 240 W)

Physical Characteristics

Dimensions	482.6 mm (19.00 in.) \times 43.9 mm (1.73 in.) \times 156.2 mm (6.15 in.)
Weight	3,020 g (106.50 oz)

Safety Voltages

Connect only voltages that are below these limits.

Input voltage range	1,000 V, Category II 2,000 V peak, other, non-MAINs circuits
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Channel-to-channel, channel-to-earth

Continuous working voltage	1,000 V, Category II 2,000 V peak, other, non-MAINs circuits
Transient overvoltage	6,000 V peak



Caution Do not connect the RM-26999 to signals or use for measurements within Measurement Categories III or IV. Do not connect to signals or use for measurements above 1,000 V RMS within Measurement Category II.



Attention Ne connectez pas le RM-26999 à des signaux et ne l'utilisez pas pour effectuer des mesures dans les catégories de mesure III ou IV. Ne le connectez pas à des signaux et ne l'utilisez pas pour effectuer des mesures supérieures à 1000 Veff dans la catégorie de mesure II.

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. Above 1,000 V RMS, these test and measurement circuits are not rated for measurements performed on circuits directly connected to the electrical distribution system referred to as MAINs. MAINs is a hazardous, live electrical supply system to which equipment is designed to be connected to for the purpose of powering equipment. Above 1,000 V RMS, this product is rated for measurements of voltages from specially protected secondary circuits, up to 2,000 V peak. Such voltage measurements include signal levels, special equipment, limited energy parts of equipment, circuits powered by regulated low-voltage sources, and electronics.



Caution Connect the PE terminal to protective earth ground in the rack installation or electrical cabinet.



Attention Connectez le terminal de mise à la terre à la borne correspondante (masse) dans l'installation en rack ou dans l'armoire électrique.

Environmental Characteristics

Temperature and Humidity

Temperature

Operating	0 °C to 55 °C
Storage	-40 °C to 71 °C

Humidity

Operating	10% RH to 90% RH, noncondensing
Storage	5% RH to 95% RH, noncondensing

Pollution Degree	2
Maximum altitude	2,000 m
Shock and Vibration	
Random vibration	
Operating	5 Hz to 500 Hz, 0.3 g RMS
Non-operating	5 Hz to 500 Hz, 2.4 g RMS
Operating shock	30 g, half-sine, 11 ms pulse

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