RM-26999

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Contents

RM-26999 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.
- **Typical-95** specifications describe the performance met by 95% (≈2σ) 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, 2,000 V Range

Signal Frequency	Accuracy	
	Typical-95	Warranted
DC	±0.05% of reading	±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 × **signal frequency in kHz**)% of reading	±(0.014 × **signal frequency in kHz**)% of reading

System noise	
±2,000 V range	53 mV RMS
±1,000 V range	31 mV RMS
±400 V range	22 mV RMS
±200 V range	21 mV RMS
DC offset	2 mV
Noise contribution, 5 MHz bandwidth	13 mV RMS, RTI
T_{cal}	23 °C ± 5 °C
Calibration interval	2 years
Gain drift	±25 ppm/°C
Attenuation	200:1

CMRR	>100 dB DC, typical
Long-term stability	$125\ \text{ppm}/\sqrt{1,000\ \text{hrs}}$
Input impedance, single-ended to earth	10 MΩ || 4.7 pF
-3 dB bandwidth	1 MHz
Output impedance	50 Ω

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	±0.05%, metal foil, 2 W, maximum
Shunt gain drift	±0.2 ppm/°C

Power Requirements

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

Physical Characteristics

Dimensions	482.6 mm × 43.9 mm × 156.2 mm (19.00 in. × 1.73 in. × 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
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

Notice This product is intended for use in indoor applications only.

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