

BK Precision 4 1/2 Digit True RMS Bench Digital Multimeter

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Model#2831D

The model 2831D provides versatility and reliability for a broad spectrum of laboratory and service applications. Being a true Multimeter it can make diode, frequency and continuity measurements in addition to basic current, voltage and resistance measurements.

- True RMS for accurate interpretation of any waveform signal
- 4 1/2 Digit LED display for clear reading in darkest environment
- Great overload protection on all ranges
- Voltage measurements up to 1200VDC and 750VAC
- Current measurements up to 20A AC/DC
- Basic accuracy for DCV is 0.05%

Specifications	model 2831D
Technical Specifications	
Important Note: All accuracies apply to 5% to 95% full scale of each range	

DC Volt

Range		Resolution	Accuracy	Impedance
2 V 20 V 200 V		100 μ V 1 mV 10 mV	$\pm(0.05\% + 5d)$	10 M Ω
1200V	1000V	100mV	$\pm(0.1\% + 5d)$	
	1200V	100mV	$\pm(0.3\% + 5d)$	

AC Volt

Range	Resolution	Frequency	Accuracy	Impedance
2V	100 μ V	40Hz to 60Hz	$\pm(0.75\% + 10d)$	10M Ω
		60Hz to 1kHz	$\pm(1.5\% + 10d)$	
		1kHz to 5kHz	$\pm(2.5\% + 10d)$	
		5kHz to 10kHz	$\pm(5.0\% + 10d)$	

20V	1 mV	40Hz to 60Hz	$\pm(0.75\% + 10d)$
		60Hz to 1kHz	$\pm(2.5\% + 10d)$
		1kHz to 5kHz	$\pm(5.0\% + 10d)$
		5kHz to 10kHz	$\pm(10\% + 10d)$
200V	10 mV	40Hz to 50Hz	$\pm(1.0\% + 10d)$
		50Hz to 60Hz	$\pm(0.75\% + 10d)$
		60Hz to 1kHz	$\pm(2.5\% + 10d)$
		1kHz to 5kHz	$\pm(5\% + 10d)$
750V	100 mV	40Hz to 50Hz	$\pm(1.0\% + 10d)$
		50Hz to 60Hz	$\pm(0.75\% + 10d)$
		60Hz to 400Hz	$\pm(2.5\% + 10d)$
		400Hz to 1kHz	$\pm(5\% + 10d)$

DC Current

Range	Resolution	Accuracy	Over Load Protection
2 mA 20 mA 200 mA	100 nA 1 μ A 10 μ A	$\pm(0.75\% + 5d)$	2A/250V
2 A	100 μ A	$\pm(1.0\% + 5d)$	
20 A	1 mA	$\pm(1.0\% + 10d)$	15A/250V

AC Current

Range	Resolution	Frequency	Accuracy	Over Load Protection
2mA	100 nA	40Hz to 50Hz	$\pm(1.5\% + 10d)$	2A/250V
20mA	1 μ A	50Hz to 60Hz	$\pm(0.75\% + 10d)$	

200mA	10 μ A	60Hz to 1kHz	$\pm(2.0\% + 10d)$	15A/250V
		1kHz to 5kHz	$\pm(3.0\% + 10d)$	
2000mA	100 μ A	40Hz to 50Hz	$\pm(1.5\% + 10d)$	
		50Hz to 60Hz	$\pm(1.0\% + 10d)$	
		60Hz to 1kHz	$\pm(2.0\% + 10d)$	
		1kHz to 5kHz	$\pm(3.0\% + 10d)$	
20A	1mA	40Hz to 50Hz	$\pm(1.5\% + 10d)$	
		50Hz to 60Hz	$\pm(1.0\% + 10d)$	
		60Hz to 1kHz	$\pm(2.0\% + 10d)$	
		1kHz to 2kHz	$\pm(3.0\% + 10d)$	

Resistance

Range	Resolution	Accuracy	Over Load Protection
2 k Ω 20 k Ω 200 k Ω 2 M Ω	0.1 Ω 1 Ω 10 Ω 100 Ω	$\pm(0.2\% + 6d)$	600V DC or Peak
20 M Ω	1 k Ω	$\pm(1\% + 10d)$	

Frequency

Range	Resolution	Accuracy	Over Load Protection
20 kHz	1 Hz	$\pm(1.5\% + 5d)$	600V DC or Peak
200 kHz	10 Hz	$\pm(2.0\% + 5d)$	

Frequencies under 500Hz requires a minimum amplitude of at least 4Vpp, other sensitivities are not specified.

- The digit error (less than 5 digits) is added in measuring value.

Audible Continuity

Test Volt	Threshold	Over Load Protection
3V	Less than 200 Ω	600V DC or Peak

Diode Test

Test Volt	Max. Test Current	Over Load Protection
2V	Approx. 1.0 mA	600V DC or Peak

Dimensions and Weight

Dimensions (H x W x D)	9.4 x 3.5 x 10.6" (240 x 90 x 270mm)
Weight Approx.	4.6lb (2.1 kg.)

Equipment Ratings

Plug and Socket	3 wire ac power plug and 3 wire outlet
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Power & Fuse Ratings

Input Voltage	Fuse	Power Max.
103 ~ 126V AC (50/60Hz)	F 0.5A / 250V	10 W
206 ~ 252V AC (50/60Hz)	F 0.2A / 250V	

Operating Environment

Temperature	0°C to +40°C (Accuracy Specified at 23°C \pm 5°C)
Temperature Coefficient	0.1 x (Specified Accuracy) per °C
Humidity	up to 85% RH (Relative Humidity) to 40°C without temperature extremes causing condensation within the instrument.

Storage Environment

Temperature	-20°C to +70°C
Humidity	below 85% RH
Insulation Category II	Portable equipment of local level.
Pollution Degree	2
Protection to IEC 529	Ordinary
Note: Specifications are subject to change without notice.	