

BM161 & BM162 GENERAL SPECIFICATION

Display: 3-3/4 digits 4000 counts
Update Rate: 3 per second nominal
Polarity: Automatic
Operating Temperature: 0°C ~ 40°C
Relative Humidity: Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 40°C
Altitude: Operating below 2000m
Storage Temperature: -20°C ~ 60°C, < 80% R.H. (with battery removed)
Temperature Coefficient:
 Nominal 0.15 x (specified accuracy)/°C @ (0°C ~ 18°C or 28°C ~ 40°C), or otherwise specified
Sensing:
 Average sensing for BM161
 True RMS sensing for BM162

Safety: Meets IEC61010-2-032 (2002), EN61010-2-032 (2002), UL61010B-2-032 (2003)
Measurement Category:
 CAT III 600V ac & dc
E.M.C.: Meets EN61326 (1997, 1998/A1), EN61000-4-2 (1995), & EN61000-4-3 (1996)
 In an RF Field of 3V/m:
 Capacitance function is not specified
 Other function ranges:
 Total accuracy = Specified accuracy + 45 digits
 Performance above 3V/m is not specified
Overload Protection:
 Clamp-on jaws:
 DC 1000A or AC 800A rms continuous + & COM terminals (all functions):
 600VDC/VAC rms
Pollution Degree: 2

Transient Protection:
 6.5kV (1.2/50µs surge) for both models
Low Battery: Below approx. 2.4V
Power Supply: standard 1.5V AAA size (NEDA 24G, NEDA 24A, IEC R03, or IEC LR03) battery x 2
Power Consumption: typical 11mA for DCA/ACA and 2.9mA for other functions
APO Consumption:
 10µA typical for BM161;
 190µA typical for BM162
APO Timing: Idle for 30 minutes
Dimension:
 L227mm x W78mm x H40mm
Weight: approx. 290 gm
Jaws opening & Conductor Diameter:
 50mm max
Accessories: Test leads pair, batteries installed, user's manual, soft carrying pouch

BM161 & BM162 Electrical Specification

Accuracy is ± (% of reading digits + number of digits) or otherwise specified, at 23°C ± 5°C & less than 75% R. H.
 True RMS model BM162 ACV & ACA clamp-on accuracies are specified from 5% to 100% of range or otherwise specified. Maximum Crest Factor are as specified below, and with frequency spectrums, besides fundamentals, fall within the meter specified AC bandwidth or non-sinusoidal waveform.

DC Voltage

RANGE	Accuracy
400.0mV	0.3% + 3d
4.000V, 40.00V, 400.0V	0.5% + 3d
600V	1.0% + 4d

NMRR: > 50dB @ 50Hz/60Hz
 CMRR: > 120dB @ DC, 50Hz/60Hz,
 Rs=1kΩ

Input Impedance: 10MΩ, 30pF nominal;
 (1000MΩ for 400.0mV range)

AC Voltage

RANGE	Accuracy
50Hz ~ 500Hz	
400.0mV ¹⁾	4.0% + 4d
50Hz ~ 60Hz	
4.000V, 40.00V, 400.0V	1.0% + 4d
60Hz ~ 500Hz	
4.000V, 40.00V, 400.0V	1.5% + 4d
50Hz ~ 500Hz	
600V	2.0% + 4d

CMRR: > 60dB @ DC to 60Hz, Rs=1kΩ
 Input Impedance: 10MΩ, 30pF nominal
 True RMS model BM162 Crest Factor:
 < 1.6 : 1 at full scale & < 3.2 : 1 at half scale

¹⁾Selection by RANGE button manually, and is specified from AC 40mV (AC 60mV for True RMS model BM162) & up

Ohms

RANGE	Accuracy
400.0Ω	0.8% + 6d
4.000kΩ, 40.00kΩ, 400.0kΩ	0.6% + 4d
4.000MΩ	1.0% + 4d
40.00MΩ	2.0% + 4d

Open Circuit Voltage: 0.4VDC typical

Audible Continuity Tester

Open Circuit Voltage: 0.4VDC typical
 Range: 400.0Ω; Accuracy: 1.5% + 6d
 Audible threshold:
 between 10Ω and 120Ω

Diode Tester

Open Circuit Voltage	Test Current (Typical)
< 1.6VDC	0.4mA

Capacitance

RANGE ¹⁾	Accuracy ^{2) 3)}
500.0nF, 5.000µF, 50.00µF, 500.0µF, 3000µF	3.5% + 6d

¹⁾Additional 50.00nF range accuracy is not specified

²⁾Accuracies with film capacitor or better
³⁾Specified with battery voltage above 2.8V (approximately half full battery). Accuracy decreases gradually to 12% at low battery warning voltage of approximately 2.4V

DCA Current (Clamp-on)

RANGE	Accuracy ^{1) 2)}
400.0A	
0A ~ 400A	1.5% + 4d
1000A	
400A ~ 800A	1.5% + 4d
800A ~ 900A	2.0% + 4d
900A ~ 1000A	5.0% + 30d

¹⁾Induced error from adjacent current-carrying conductor: < 0.01A/A

²⁾Relative Zero Δ mode is applied to offset the non-zero residual readings, if any

ACA Current (Clamp-on)

RANGE	Accuracy ^{1) 2)}
400.0A	
15Hz ~ 40Hz	2.0% + 5d ³⁾
40Hz ~ 200Hz	1.5% + 5d
200Hz ~ 400Hz @ < 50A ⁴⁾	1.5% + 5d
400Hz ~ 1kHz @ < 50A ⁴⁾	2.0% + 5d
800A	
15Hz ~ 40Hz	2.0% + 5d ³⁾
40Hz ~ 100Hz	1.5% + 5d
15Hz ~ 60Hz	5.0% + 30d

¹⁾Induced error from adjacent current-carrying conductor: < 0.01A/A

²⁾True RMS model BM162 Crest Factor:
 < 1.6 at full scale & < 3.2 at half scale

³⁾4.0%+5d for True RMS model BM162

⁴⁾Accuracy is specified at < 50A in this frequency bandwidth due to limited calibrator output capability for testing



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Printed in Taiwan

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