A High Quality DC & AC Current Clamp-On!

Plus 30ms Max Hold To Capture In-Rush Currents !
And Full Industrial Features For Serious Users!

CE

BM160 Series

Versatile AC/DC Clamp-On Multimeter

BRYMEN®

BRIGHT PEOPLE'S CHOICE

http://www.brymen.com

BM162

BM161

162	161	FUNCTIONS & FEATURES
●	●	Versatile & Handy
●	●	DC1000A / AC800A Clamp-on + Full Multimeter ranges
●	●	50mm Large jaws opening
●	●	Fully auto-ranging on all functions for ease of use
●	●	4000 counts high resolution; Fast measurements
●	●	600VAC/DC input protection on all functions
●		AC True RMS voltage and current functions
●		Back lighted display
●	●	30ms Max HOLD to capture in-rush currents
●	●	Data HOLD
●	●	Relative Zero feature
●	●	DCV 0.1mV to 600V
●	●	ACV 0.1mV to 600V
●	●	DCA 0.1A to 1000A non-invasive current measurements
●	●	ACA 0.1A to 800A non-invasive current measurements
●	●	Ohm 0.1Ω to 40.00MΩ
●	●	Capacitance 50nF to 3000μF
●	●	Fast Audible Continuity
●	●	Diode Test
●	●	Battery cover with Probe holders
●	●	Rugged Fire retarded casing; Soft carrying pouch
●	●	Transient protection 6.5kV 1.2/50μs lightning surge
●	●	LVD EN61010-2-032 CAT III 600V
●	●	EMC EN61326(97/98A1)/EN61000-4-2(95)/EN61000-4-3(96)

Large Jaws, Large Display & Full Functions!

An All-In-One DC & AC Clamp That Is Most Complete & Easy To Use !

LARGE U-SHAPE CLAMP JAWS FOR DCA & ACA
MEASURE CURRENTS OF LARGE SINGLE CONDUCTOR
OR DIFFERENTIAL CURRENTS OF MULTIPLE CONDUCTORS

RUGGED & DURABLE
HIGH-IMPACT FIRE-RETARDED ENCLOSURE
FOR REINFORCED SAFETY & RELIABILITY

LVD CAT III 600V SAFETY
MEETS EN61010-2-032 CAT III 600V

TRUE RMS (BM162 ONLY)
FOR NON-SINUSOIDAL WAVEFORMS
OF AC VOLTAGES & AC CURRENTS

HIGH SPEED AUTO-RANGING
SHORTENS THE TIME TO TEST
AND INCREASES THE EASE OF USE

DISPLAY BACKLIGHT (BM162 ONLY)
FOR EASY VIEWING IN THE DARK

FUNCTION SELECTION
CONVENIENTLY TOGGLE BETWEEN
PRIMARY & SECONDARY FUNCTIONS

5 FULL DC VOLTAGE RANGES
FROM 400mV RANGE
UP TO 600 V RANGE

5 FULL AC VOLTAGE RANGES
FROM 400mV RANGE
UP TO 600 V RANGE

DC 1000 AMPS MEASUREMENTS
2 NON-INVASIVE DC CURRENT AUTO-RANGES
VIA CLAMP JAWS; BEST RESOLUTION 0.1A

AC 800 AMPS MEASUREMENTS
2 NON-INVASIVE AC CURRENT AUTO-RANGES
VIA CLAMP JAWS; BEST RESOLUTION 0.1A

EMC
MEETS EN61326(1997, 1998/A1),
EN61000-4-2(1995), & EN61000-4-3(1996)

STYLISH & HANDY
ALSO COMES WITH A SOFT POUCH
FOR EASY CARRYING & PROTECTION

30ms MAX HOLD
CAPTURES PEAK IN-RUSH CURRENT
AS SHORT AS 30ms IN DURATION

DATA HOLD
FREEZES THE DISPLAYING
READING FOR LATER VIEWING

BATTERY COMPARTMENT
WITH ACCESS DOOR FOR
EASY BATTERY REPLACEMENT

PROBE HOLDERS
BUILT-IN PROBE STORAGE HOLDERS

RELATIVE ZERO MODE
FOR CONVENIENT READINGS COMPARISON
& DCA ZERO ADJUSTMENT

LARGE EASY-TO-READ LCD DIGITS
WITH 3/SEC NOMINAL UPDATE RATE

MANUAL-RANGING MODE
AUTO-RANGING WITH MANUAL-RANGING OVERRIDE

DIODE TEST
FOR TESTING DIODES AND RECTIFIERS

CAPACITANCE
6 RANGES; AUTO-RANGING
UP TO 3000μF WITH 600V PROTECTION

AUDIBLE CONTINUITY
FOR QUICK OPEN-SHORT TESTS
ON SWITCHES, FUSES, AND WIRES

RESISTANCE
6 RANGES; AUTO-RANGING
UP TO 40MEGA OHMS WITH 600V PROTECTION

TRANSIENT PROTECTION
UP TO 6.5kV 1.2/50μs LIGHTNING SURGE;
MORE CONFIDENCE FOR SERIOUS USERS

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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