

# Perfect Combination Of Size & Innovative Functions!

Ergonomic, Magnetic Hanger, Probe Holders, Tilt stand, Battery & Fuses Access Cover... User-Oriented!  
PC-Comm, Bar-graph, BeepJack, Crest (Peak), Rec (Min Max), Relative, Backlit... Full-Features!  
AutoCheck+LoZ, EF-Detection, Capacitance, Line Level Hz, Temperature... Full-Functions!



**BM250 Series  
Practical Multimeters**

**BRYMEN**<sup>®</sup>  
BRIGHT PEOPLE'S CHOICE  
<http://www.brymen.com>



● **BM257**



● **BM255**



● **BM252**



● **BM251**

257	255	252	251	FUNCTIONS & FEATURES
●	●	●	●	3-5/6 Digits 6,000 Counts Large Easy To Read LCD Display
●	●	●	●	Fast Measurements, 5/Sec; Fully Auto-Ranging
●	●	●	●	24 Segment Analog Bar-graph Updates 40/Sec
●	●	●	●	0.2% High Basic DCV Accuracy
●	●	●	●	Auto Power Off
●	●	●	●	Optional Purchase RS232C+USB Cables & Software For Win98/2k/xp/Vista
●	●	●	●	True RMS AC Conversion
●	●	●	●	AutoCheck™ Feature (Automatic DCV, ACV & Ohms Selection)
●	●	●	●	Lo-Z Volts To Drain Ghost Voltages (AutoCheck™ Feature)
●	●	●	●	Record Max/Min Readings, Auto-Ranging
●	●	●	●	Crest (Peak Hold) Max/Min Readings
●	●	●	●	Back-Lighted Large Easy To Read LCD Display
●	●	●	●	Data Hold
●	●	●	●	Relative Zero Mode
●	●	●	●	Non-Contact EF-Detection (NCV)
●	●	●	●	Probe-Contact EF-Detection For More Precise Indication Of Live
●	●	●	●	Beep-Jack™ Input Warning Against Improper A-Terminal Plug In
●	●	●	●	DCV 0.01mV To 1000V
●	●	●	●	ACV 0.01mV To 1000V
●	●	●	●	DCA 0.1µA To 8A (15A for 30 sec. max with 5 minutes cool down interval)
●	●	●	●	ACA 0.1µA To 8A (15A for 30 sec. max with 5 minutes cool down interval)
●	●	●	●	Ohms 0.1Ω To 60MΩ
●	●	●	●	Capacitance 60.00nF To 3000µF
●	●	●	●	Type-K Temperature Readings -50°C To 1000°C
●	●	●	●	Line Level Frequency 10.00Hz To 10.00kHz
●	●	●	●	Logic Level Frequency 5.00Hz to 1.000MHz
●	●	●	●	Diode Tester
●	●	●	●	Rugged Fire Retarded Casing
●	●	●	●	Replaceable Protective Holster With Probe-Holders & Tilt-Stand
●	●	●	●	Optional Purchase Magnetic Hanger
●	●	●	●	Batteries And Fuses Access Door
●	●	●	●	600V General (Ohm, Capacitance ... etc.) Input Protection
●	●	●	●	Transient Protection Up To 6kV 1.2/50µs Lightning Surge
●	●	●	●	LVD Meets EN61010-1 CAT II 1000V, CAT III 600V & CAT IV 300V
●	●	●	●	EMC EN61326-1:2006 (EN55022, EN61000-3-2/-3 & EN61000-4-2/-3/-4/-5/-6/-8/-11)

# Right Size, High Safety and Nice Features !

Equipped With EF-Detection For Live Lines Identification !  
Beep-Jack™ Guards Against Improper Plug In !



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

**AUTO & MANUAL-RANGING**  
AUTO-RANGING WITH  
MANUAL-RANGING OVERRIDE

**DISPLAY BACKLIGHT**  
FOR EASY VIEWING IN THE DARK

**FUNCTION SELECTION**  
TOGGLE CONVENIENTLY BETWEEN  
PRIMARY & SECONDARY FUNCTIONS

**CAPACITANCE**  
UP TO 3000 $\mu$ F WITH 600V PROTECTION;  
AUTO-RANGING

**MAX MIN RECORD**  
RECORD MAX and MIN  
READINGS; AUTO-RANGING

**HIGH IMPEDANCE VOLTAGE**  
1000VAC/DC MEASURING CAPABILITIES;  
HIGH INPUT IMPEDANCE FOR  
LOAD SENSITIVE CIRCUITS

**AUTOCHECK™ FEATURE**  
AUTOMATIC SELECTION OF  
LoZ DCV, LoZ ACV & OHMS

**GHOST-VOLTAGE-BUSTER**  
LoZ DRAINS GHOST/ STRAY VOLTAGES  
LEAVING ONLY HARD SIGNALS  
ON METER READINGS

**DIODE TEST**  
FOR CHECKING DIODES  
AND RECTIFIERS

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

**BEEP-JACK™ AUDIBLE WARNING**  
BEEPS AGAINST IMPROPER A-TERMINAL  
PLUG IN. DECREASES RISKS OF DAMAGE

**PROTECTIVE HOLSTER**  
WITH HOLDERS FOR PROBE STORAGE  
AND "THIRD HAND" FEATURE  
REPLACEABLE & WASHABLE

**PC INTERFACE CAPABILITY**  
OPTIONAL PURCHASE RS232C+USB CABLES  
WITH DATA RECORDING PC SOFTWARE  
FOR WIN98/NT4/2K/XP/VISTA

**ASIC TECHNOLOGY**  
MORE FUNCTIONS & FEATURES  
AT AFFORDABLE PRICES

**TRUE RMS MEASUREMENTS**  
FOR NON-SINUSOIDAL WAVEFORMS  
OF AC VOLTAGES & AC CURRENTS

**LARGE 6000 COUNTS LCD DISPLAY**  
5/SEC FAST NOMINAL UPDATE RATE

**HIGH ACCURACY**  
0.2% BASIC DCV ACCURACY

**ANALOG BAR-GRAPH**  
FAST UPDATE RATE 40/SEC

**LOGIC LEVEL Hz (mV FUNCTION)**  
MEASURES HI FREQUENCY  
LOGIC SIGNALS

**LINE LEVEL Hz (V FUNCTION)**  
MEASURES NOISY HIGH VOLTAGE  
ACV FREQUENCIES

**EF-DETECTION**  
BOTH NON-CONTACT (NCV) &  
SINGLE-PROBE VOLTAGE DETECTION  
FOR IDENTIFYING LIVE LINES

**DATA HOLD**  
FREEZES THE DISPLAYING  
READING FOR LATER VIEW

**CREST (PEAK HOLD)**  
CAPTURES INSTANTANEOUS  
+PEAK & -PEAK

**TYPE-K TEMPERATURE**  
SELECTABLE °C & °F READINGS

**AUTO-POWER-OFF**  
TO EXTEND BATTERY LIFE

**ERGONOMIC STREAMLINE DESIGN**  
FITS COMFORTABLY IN ONE'S HAND

**TRANSIENT PROTECTION**  
UP TO 6kV 1.2/50 $\mu$ s LIGHTNING SURGE;  
SUPERB PROTECTION FOR SERIOUS USERS

**EMC**  
MEETS EN61326-1:2006  
(EN55022, EN61000-3-2/-3 &  
EN61010-4-2/-3/-4/-5/-6/-8/-11)

**LVD SAFETY**  
MEETS EN61010-1 2ND EDITION  
CAT II 1kV, CAT III 600V & CAT IV 300V

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

## BM257, BM255, BM252 & BM251 GENERAL SPECIFICATION

**Display:** 3-5/6 digits 6,000 counts  
**Update Rate:** 5 per second nominal  
**24 Segments Bar graph:** 40 per second max  
**Operating Temperature:** 0°C to 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:**  
 BM251, BM252, & BM255: Average sensing  
 BM257: True RMS sensing  
**Pollution Degree:** 2  
**Safety:** Double insulation per IEC61010-1 2nd Ed., EN61010-1 2nd Ed., UL61010-1 2nd Ed. & CAN/CSA C22.2 No. 61010.1-0.92 to Category II 1000V, CAT III 600V and CAT IV 300V AC & DC

**Transient Protection:** 6.5kV (1.2/50µs surge)  
**Terminals (to COM) Measurement Category:**  
 V: Category II 1000V, CAT III 600V and CAT IV 300V AC & DC.  
 mAµA: Category III 500Vac and 300Vdc.  
 A: Category III 600Vac and 300Vdc.  
**E.M.C.:** Meets EN61326-1:2006 (EN55022, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11)  
 In an RF field of 3V/m:  
 Capacitance function is not specified  
 Other function ranges:  
 Total Accuracy = Specified Accuracy + 100 digits  
 Performance above 3V/m is not specified  
**Overload Protection:**  
**µA & mA:** 0.63A/500Vac, IR 150kA @500Vac  
**A:** 10A/600Vac or 15A/600Vac, IR 100kA @600Vac  
**V:** 1050 Vrms, 1450 Vpeak  
**AutoCheck™, mV, OHM & others:** 600 Vrms  
**Low Battery:** Below approx. 2.3V

**Power Supply:** 1.5V AAA Size battery X 2  
**Power Consumption (typical):** 3.5mA  
**APO Consumption (typical):** 10µA  
**APO Timing:** Idle for 34 minutes  
**Dimension:** 161\*80\*50mm L\*W\*H (With Holster)  
**Weight:** Approx. 340 gm (With Holster)  
**Special Features:** AutoCheck™ V & Ω (BM255 & BM257 only); Auto-ranging MAX/MIN Record (BM255 & BM257 only); Crest mode (Peak Hold; BM255 & BM257 only); Backlighted display (BM255 & BM257 only); Auto-ranging Zero Relative mode; Display Hold; EF-Detection (NCV); Interface capabilities with PC computer; Input warning detection  
**Accessories:** Test lead pair; Batteries installed; User's manual; BKP60 banana plug type-K thermocouple (BM252, BM255 & BM257 only)  
**Optional purchase accessories:** BRUA-20X USB interface kit; BMH-01 Magnetic hanger; BKB32 banana plug to type-K socket plug adaptor

## Electrical Specification

Accuracy is given as +/- (% of reading digits + number of digits) or otherwise specified @ 23°C +/- 5°C and less than 75% R.H.

True RMS model BM257 ACV & ACA accuracies are specified from 5% to 100% of range or otherwise specified. Maximum Crest Factor <3:1 at full scale & <6:1 at half scale, and with frequency components fall within the meter specified frequency bandwidth for non-sinusoidal waveforms

### AC Voltage

RANGE	Accuracy
50Hz ~ 400Hz	
60.00mV, 600.0mV	1.0% + 5d
6.000V, 60.00V, 600.0V, 1000V	

CMRR: >60dB @ DC to 60Hz, Rs=1kΩ  
 Input Impedance: 10MΩ, 50 pF nominal

### AutoCheck™ ACV (BM255 & BM257 only)

RANGE	Accuracy
50Hz/60Hz	
1.000V ~ 1000V	1.4% + 5d

AutoCheck™ Lo-Z ACV Threshold: > 1V nominal  
 AutoCheck™ Lo-Z ACV Input Impedance:  
 Initially approx. 2.5kΩ, 120pF nominal; Impedance increases abruptly within a fraction of a second as display voltage is above 50V (typical). Ended up impedances vs display voltages typically are:  
 15kΩ @100V  
 100kΩ @300V  
 250kΩ @600V  
 375kΩ @1000V

### DC Voltage

RANGE	Accuracy
60.00mV, 600.0mV	0.2%+3d
6.000V, 60.00V, 600.0V, 1000V	

NMR: > 60dB @ 50Hz/60Hz  
 CMRR: > 100dB @ DC, 50Hz/60Hz; Rs=1kΩ  
 Input Impedance: 10MΩ, 50 pF nominal

### AutoCheck™ DCV (BM255 & BM257 only)

RANGE	Accuracy
1.000V ~ 1000V	1.3% + 3d

AutoCheck™ Lo-Z DCV Threshold: > +1.0VDC & < -1.0VDC nominal  
 AutoCheck™ Lo-Z DCV Input Impedance:  
 Initially approx. 2.5kΩ, 120pF nominal; Impedance increases abruptly within a fraction of a second as display voltage is above 50V (typical). Ended up impedances vs display voltages typically are:  
 15kΩ @100V  
 100kΩ @300V  
 250kΩ @600V  
 375kΩ @1000V

### OHM

RANGE	Accuracy
600.0Ω, 6.000kΩ, 60.00kΩ, 600.0kΩ	0.5%+4d
6.000MΩ	0.7%+4d
60.00MΩ	1.2%+4d

Open Circuit Voltage: 0.45VDC typical

### AutoCheck™ OHM (BM255 & BM257 only)

RANGE <sup>1)</sup>	Accuracy
00.00Ω ~ 60.00MΩ	1.2% + 10d

Open Circuit Voltage: 0.45VDC typical  
<sup>1)</sup>AutoCheck™ OHM Threshold: < 10MΩ nominal

### ↳ Audible Continuity Tester

Audible Threshold: Between 10Ω and 80Ω  
 Response time: 32ms

### ↳ Diode Tester

RANGE	Accuracy
1.000V	1.0% + 3d

Test Current: 0.56mA typically  
 Open Circuit Voltage: < 1.8VDC typically

### ↳ Capacitance (BM252, BM255 & BM257 only)

RANGE	Accuracy
60.00nF, 600.0nF	2.0%+5d
6.000µF, 60.00µF, 600.0µF	1.5%+5d
3000µF	2.0%+5d

Accuracies with film capacitor or better

### Temperature (BM252, BM255 & BM257 only)

RANGE	Accuracy
-50 °C ~ 1000 °C	0.3% + 3d
-58 °F ~ 1832 °F	0.3% + 6d

K type thermocouple range & accuracy not included

### DC Current

RANGE	Accuracy	Burden Voltage
600.0µA, 6000µA	0.5%+3d	0.10 mV/uA
60.00mA, 600.0mA		1.7 mV/mA
6.000A, 08.00A <sup>1)</sup>		0.02V/A

<sup>1)</sup>8A continuous, >8A to 15A for 30 sec. max with 5 minutes cool down interval

### AC Current

RANGE	Accuracy	Burden Voltage
50Hz ~ 400Hz		
600.0µA, 6000µA	1.0%+3d	0.10 mV/uA
60.00mA, 600.0mA		1.7 mV/mA
6.000A, 08.00A <sup>1)</sup>		0.02V/A

<sup>1)</sup>8A continuous, >8A to 15A for 30 sec. max with 5 minutes cool down interval

### CREST Mode (BM255 & BM257 only)

Accuracy: Specified accuracy plus 150 digits for changes > 5ms in duration.

### RECORD Mode (BM255 & BM257 only)

Accuracy: Specified accuracy plus 100 digits for changes > 100ms in duration.

### Logic Level Hz (@ mV function)

RANGE	Sensitivity (square wave)
5.00 Hz ~ 500.0 kHz	3 Vpeak
5.00 Hz ~ 1.000 MHz	5 Vpeak

Accuracy: 0.03%+2d

### Hz (Line) @ ACV, DCV, Current & AutoCheck™

Function	Sensitivity (Sine RMS)	Range
6V	0.4V	10Hz - 10kHz
60V	4V	10Hz - 50kHz
600V	40V	10Hz - 50kHz
1000V	400V	45Hz - 1kHz
600µA	40µA	10Hz - 10kHz
6000µA	400µA	10Hz - 10kHz
60mA	4mA	10Hz - 10kHz
600mA	40mA	10Hz - 10kHz
6A	1A	10Hz - 1kHz
10A	6A	10Hz - 1kHz

Accuracy: 0.03%+3d

### Non-Contact EF-Detection

Typical Voltage	Bar Graph Indication
20V (tolerance: 10V ~ 36V)	-
55V (tolerance: 23V ~ 83V)	--
110V (tolerance: 59V ~ 165V)	---
220V (tolerance: 124V ~ 330V)	----
440V (tolerance: 250V & 1000V)	-----

Indication: Bar-graph segments & audible beep tones proportional to the field strength  
 Detection Frequency: 50/60Hz  
 Detection Antenna: Top-right end of the meter  
 Probe-Contact EF-Detection: For more precise indication of live wires, such as distinguishing between live and ground connections, use the Red (+) test probe for direct contact measurements.



### BRYMEN TECHNOLOGY CORPORATION

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