

The Return Of The Popular High Performance BM810"a" Series

High Speed, High Accuracy, High Dollar-value + BeepJack™ High Safety



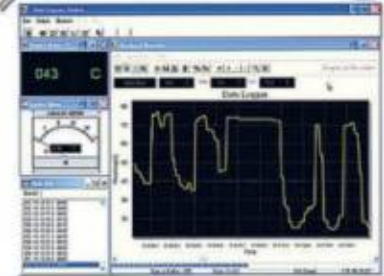
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**BM810a Professional
DMM Series**



BRUA-85Xa Interface Kit
(optional purchase)



● BM817a ● BM815a ● BM812a ● BM811a

BM817a / BM817CFa	BM815a / BM815CFa	BM812a / BM812CFa	BM811a / BM811CFa	Functions & Features
●	●	●	●	3-4/5 Digits 5,000 Counts For DC/AC Voltage/Current & OHM
●	●			Type-K Temperature -50°C To 1000°C
●		●		AC True RMS 20kHz High Bandwidth Voltage Functions
●	●	●	●	Optically Isolated PC-COMM Interface Capability
●	●	●	●	BRUA-85Xa Interface Kit For Win 95/98/ME/NT4/2K/XP/Vista (Optional Purchase)
●	●	●	●	Audible & Visible BeepJack™ Input Warning Against Improper Plug In
●	●			RECORD Max, Min, Max-Min Readings, Auto-Ranging
●	●			CREST (Peak Hold) Max, Min, Max-Min Readings
●	●	●	●	Back-Lighted Large Easy To Read LCD Display
●	●	●	●	High Speed Analog Bar-Graph Updates 60/Sec
●	●	●	●	Intelligent Auto Power Off (APO)
●	●	●	●	Fast Data Measurement 5/Sec
●	●	●	●	High General Input Protection 600V for a-version (1kV for CFa-version)
●	●	●	●	0.08% High Basic DCV Accuracies
●	●	●	●	Fire Retarded Case
●	●			Relative Zero Mode
●	●	●	●	Data Hold
●	●	●	●	Diode Test
●	●	●	●	DC/AC Current 0.1µA To 15A
●	●	●	●	DC/AC Voltage 0.01mV To 1000V
●	●	●	●	Ohms 0.01Ω To 50MΩ
●	●	●	●	Capacitance 10pF To 9999µF
●	●	●	●	Fast Audible Continuity < 100µS
●	●	●	●	Line Level FREQUENCY With 4 Trigger Levels
●	●	●	●	High Energy HBC Fuses Protected 600V for a-version (1kV for CFa-version)
●	●	●	●	Replaceable And Washable Protective Rubber Holster
●	●	●	●	Transient Protection Up To 8kV 1.2/50µS Lightning Surge
●	●	●	●	LVD Meets EN61010-1 CAT III 1000V & CAT IV 600V
●	●	●	●	EMC EN61326-1:2006 (EN55022, EN61000-3-2/3 & EN61000-4-2/3/4/5/6/8/11)

Proven Accuracy... Certified Safety... Superb Performance

Swift 60/Sec Bargraph, 20/Sec Data (Record Mode) & PC-Comm capability



FULLY AUTORANGING
SHORTENS THE TIME TO TEST AND INCREASES THE EASE OF USE

CREST (PEAK HOLD)
CAPTURES INSTANTANEOUS PEAK READINGS AS SHORT AS 5ms IN DURATION

MAX-MIN RECORD
RECORD MAX, MIN, MAX-MIN READINGS, AUTORANGING DATA UPDATES 20/SEC

BACKLIGHTED LCD DISPLAY
FOR EASY VIEWING IN THE DARK

FUNCTION SELECTION
CONVENIENTLY TOGGLE BETWEEN PRIMARY & SECONDARY FUNCTIONS

RANGE
AUTORANGING WITH MANUAL-RANGING OVERRIDE

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

DIODE TEST
FOR CHECKING DIODES AND RECTIFIERS

PLUS 50mV LOW VOLTAGE RANGE
UP TO 0.01mV RESOLUTION

1kV AC VOLTAGE MEASUREMENT
IMPROVED MEASURING CAPABILITIES

HBC FUSE PROTECTED
HIGH BREAKING CAPACITY 600V CERAMIC FUSE PROTECTED (1kV FOR CF-VERSION)

BEEP-JACK™ AUDIBLE & VISIBLE WARNING
GUARDS AGAINST IMPROPER A-TERMINAL PLUG IN. DECREASES RISKS OF DAMAGE

FIRE RETARDED CASE
FOR REINFORCED SAFETY

TRUE RMS
MEASURES TRUE VALUE REGARDLESS OF WAVEFORMS

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

0.08% HIGH BASIC ACCURACY
WITH LARGE EASY TO READ DISPLAY

AUTO POWER OFF (APO)
TO EXTEND BATTERY LIFE

FAST MEASUREMENTS
DATA UPDATES 5 TIMES / SEC

RELATIVE ZERO MODE
FOR CONVENIENT READINGS COMPARISON & OFFSET

ZOOM ANALOG POINTER
5 TIMES THE RESOLUTION TO DETECT SMALL SIGNAL TRENDS, UPDATES 60 TIMES PER SECOND

Hz FUNCTION
FREQUENCY MEASUREMENT

DATA HOLD
FREEZES THE DISPLAYING READING FOR LATER VIEW

PLUS 50Ω LOW OHM RANGE
UP TO 0.01mΩ RESOLUTION, AUTO TEST LEADS CALIBRATION

K-TYPE TEMPERATURE
SELECTABLE °C OR °F MEASUREMENTS

CAPACITANCE
AUTORANGING UP TO 9999μF WITH 600V PROTECTION (1kV FOR CF-VERSION)

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

TRANSIENT PROTECTION
UP TO 8kV 1.2/50μs LIGHTNING SURGE, MORE CONFIDENCE FOR SERIOUS USERS

LVD
MEETS EN61010-1 SECOND EDITION CAT III 1kV & CAT IV 600V

PROTECTIVE HOLSTER
INCREASES PRODUCT DURABILITY

BM817a
TRUE RMS DMM

BM811a, BM812a, BM815a, BM817a GENERAL SPECIFICATION

Display: 3-4/5 digits 5000 counts LCD display

Update Rate:

Digital Data 5 per second nominal;

52 Segments Bar-graph 60 per second nominal

AC Sensing: True RMS for BM812a & BM817a, and average sensing for BM811a & BM815a

Operating Temperature: 0°C to 45°C

Relative Humidity: Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 45°C

Storage Temperature: -20°C to 60°C, 80% R.H. (with battery removed)

Temperature Coefficient: nominal 0.15 x (specified accuracy) / °C @ (0°C ~ 18°C or 28°C ~ 45°C), or otherwise specified

Pollution degree: 2

Altitude: Operating below 2000m

Overload Protections:

Standard-version BM810a series:

µA & mA : 1A/600V, IR 10kA or better, F fuse;

A : 10A/600V, IR 100kA or better, F fuse

V : 1050Vrms, 1450Vpeak

mV, Ω, & Others : 600VDC/VAC rms

CF-version BM810CFa series:

µA & mA : 0.44A/1000V, IR 10kA or better, F fuse

A : 11A/1000V, IR 20kA or better, F fuse

V, mV, Ω, & Others : 1050Vrms / 1450Vpeak

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 III 1000V AC & DC and Category IV 600V AC & DC

BM810a Terminals (to COM) Measurement

Category:

V : Category III 1000V AC & DC and Category IV 600V AC & DC

A / mAµA : Category III and Category IV 600 Vac and 300 Vdc.

BM810CFa Terminals (to COM) Measurement

Category:

V / A / mAµA : Category III 1000V AC & DC and Category IV 600V AC & DC

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

Transient protection: 8kV (1.2/50µs surge)

Power Supply: Single standard 9V battery

NEDA1604, JIS006P or IEC6F22

Power Consumption: 4.3 mA typical

Low Battery: Below approx. 7V

APO Timing: Idle for 17 minutes

APO Consumption: 50µA typical

Dimension: L186mm X W87mm X H35.5mm;

L198mm X W97mm X H55mm with holster

Weight: 340 gm; 430 gm with holster

Accessories: Test leads (pair); Holster; Battery (installed); User's manual; Bkp60 banana plug K type thermocouple (BM815a & BM817a only)

Optional Accessories: BRUA-85Xa PC interface kit (BC-85Xa RS232 optical adapter cable + Bs8151X software CD + BUA-2303 USB-to-Serial adaptor); Bkb32 banana plugs to K-type socket plug adapter (BM815a & BM817a only)

Special Features:

All models:

Data-Hold; Range-Hold; Backlighted Display;

Optional PC-interface capabilities

BM815a & BM817a only:

50ms Record MAX-MIN readings at fast 20/second

measurement mode; 0.8ms Crest (Instantaneous

Peak-Hold) MAX-MIN readings; Relative-Zero offset

mode; Zoom 5x analog pointer at 60/s

ELECTRICAL SPECIFICATIONS

Accuracy is +/- (% reading digits + number of least significant digits) or otherwise specified, at 23°C +/- 5°C & less than 75% R.H.

True RMS models BM812a & BM817a 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 spectrums, besides fundamentals, fall within the meter specified AC bandwidth for non-sinusoidal waveforms.

DC Voltage

RANGE	Accuracy
50.00 mV	0.12% + 2d
500.0 mV	0.06% + 2d
5.000V, 50.00V, 500.0V, 1000V	0.08% + 2d

NMRR : >60dB @ 50/60Hz

CMRR : >120dB @ DC, 50/60Hz, Rs=1kΩ

Input Impedance : 10MΩ, 16pF nominal (44pF nominal for 50mV & 500mV ranges)

AC Voltage

RANGE	Accuracy
50Hz ~ 60Hz	
50.00mV, 500.0mV, 5.000V, 50.00V, 500.0V, 1000V	0.5% + 3d
40Hz ~ 500Hz	
50.00mV, 500.0mV	0.8% + 3d
5.000V, 50.00V, 500.0V	1.0% + 4d
1000V	1.2% + 4d
Up to 20kHz	
50.00mV, 500.0mV	0.5dB*
5.000V, 50.00V, 500.0V	3dB*
1000V	Unspec'd

*Specified from 30% to 100% of range

CMRR : >60dB @ DC to 60Hz, Rs=1kΩ

Input Impedance : 10MΩ, 16pF nominal (44pF nominal for 50mV & 500mV ranges)

Crest mode for V & A functions

(BM815a & BM817a only)

Accuracy: Specified accuracy ±150 digits for changes > 0.8 ms in duration

Capacitance

RANGE	Accuracy*
50.00nF	0.8% + 3d
500.0nF	0.8% + 3d
5.000µF	1.5% + 3d
50.00µF	2.5% + 3d
500.0µF	3.5% + 5d
9999µF	5.0% + 5d

*Accuracies with film capacitor or better

DC Current

RANGE	Accuracy	Burden Voltage
500.0µA	0.2%+4d	0.15mV/µA
5000µA		0.15mV/µA
50.00mA		3.3mV/mA
500.0mA		3.3mV/mA
5.000A		45mV/A
10.00A*		45mV/A

*10A continuous, >10A to 15A (to 20A for CF-version)

for 30 second max with 5 minutes cool down interval

AC Current

RANGE	Accuracy	Burden Voltage
50Hz ~ 60Hz		
500.0µA	0.6%+3d	0.15mV/µA
5000µA		0.15mV/µA
50.00mA		3.3mV/mA
500.0mA	1.0%+3d	3.3mV/mA
5.000A	0.6%+3d	45mV/A
10.00A*		45mV/A
40Hz ~ 1kHz		
500.0µA	0.8%+4d	0.15mV/µA
5000µA	0.8%+4d	0.15mV/µA
50.00mA	0.8%+4d	3.3mV/mA
500.0mA	1.0%+4d	3.3mV/mA
5.000A	0.8%+4d	45mV/A
10.00A*	0.8%+4d	45mV/A

*10A continuous, >10A to 15A (to 20A for CF-version)

for 30 second max with 5 minutes cool down interval

Temperature (BM815a & BM817a only)

RANGE	Accuracy*
-50 °C TO 1000 °C	0.3% + 3d
-58 °F TO 1832 °F	0.3% + 5d

*Thermocouple range & accuracy not included

Audible Continuity Tester

Audible threshold : between 20Ω and 200Ω. Fast response time < 100µs

Ohms

RANGE	Accuracy
50.00Ω	0.3% + 6d
500.0Ω	0.1% + 3d
5.000kΩ, 50.00kΩ, 500.0kΩ	0.1% + 2d
5.000MΩ	0.4% + 3d
50.00MΩ	2.0% + 5d

Open Circuit Voltage : < 1.3VDC

(< 3VDC for 50Ω & 500Ω ranges)

Frequency

Function	Sensitivity (Sine RMS)	Range
mV	300mV	10Hz - 125kHz
5V	2V	10Hz - 125kHz
50V	20V	10Hz - 20kHz
500V	80V	10Hz - 1kHz
1000V	300V	10Hz - 1kHz
Ω, Cx, diode	300mV	10Hz - 125kHz
µA, mA, A	10% F.S.	10Hz - 125kHz

Accuracy: 0.01% + 2d

Diode Tester

Range	Accuracy	Test Current (Typical)	Open Circuit Voltage
2.000V	1%+1d	0.4mA	< 3.5 VDC



BRYMEN TECHNOLOGY CORPORATION

http://www.brymen.com

TEL: +886 2 2226 3396 (rep)

FAX: +886 2 2225 0025

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